The development of a work-life fit model: A demands and resources approach

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Michelle Turner

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SUMMARY

Workers of the Australian construction industry experience demands, such as long working hours, irregular work schedules and geographically isolated work locations. Research has indicated a clear relationship between excessive work demands and work-life conflict, which has negative impacts for workers' health and wellbeing. Coupled with work demands, workers also experience demands originating from their family and community domains, which is often driven by life stage and individual preferences of workers. In order to fulfill work, family and community demands, workers often call on resources such as supervisor support, flexibility of work schedule, and childcare. The research sought to (i) identify the demands and resources relevant to workers of the Australian construction industry; (ii) identify the demand-resource profiles on different worker groups within a diverse construction workforce; (iii) investigate whether individual attributes influence demand-resource profiles; and (iv) evaluate whether Q Methodology was a suitable methodology with which to explore the work-life experience of workers of the construction industry.

A mixed methods approach was used to explore workers' experience of demands and resources, which incorporated Q Methodology and survey research. The research suggests that Australian construction workers can be classified into four broad groups according to their work, family and community demand profiles. Results indicate that the construction workforce is not a homogenous workforce. Instead, the demands and resources associated with each of the four groups emphasises the heterogeneous nature of the construction workforce. Results suggest that the four worker profiles shared some commonality across experience and preference for demands and resources, and these originated primarily from the work and family domains. All profiles indicated low participation in the community domain. Results emphasised the subjective nature of experience, the dynamic and interdependent nature of demands and resources, and the role life stage plays in the configuration of demand-resource profiles. Given its focus on exploring subjectivity, Q Methodology was considered a sound methodology from which to explore the work-life experience of workers in the Australian construction industry.

The findings of the research form the basis of a new work-life fit model which applies a demands-resources approach. The major components of the model are: (i) demands and resources; (ii) individual factors influencing demand–resource profiles; (iii) meaning attributed to experience; (iv) work-life fit / mis-fit; and (v) role quality.

Keywords: Work-life fit, demands, resources, work, family, community, construction.

1 Chapter One: INTRODUCTION

1.1 Introduction

This Chapter starts by outlining the characteristics of the construction industry, and the work-life issues experienced by these workers. The research problem and research questions are then introduced. A brief overview of the methodology is provided, and then the research timeline is outlined. Finally, the structure and organization of the thesis are presented.

1.2 Characteristics of the construction industry

The construction industry is a vast and diverse industry which is "*responsible for the production of the built environment. As such it designs, manufactures, maintains and demolishes all the man-made buildings, bridges, roads, tunnels, dams etc. that we utilize every day of our lives*" (Langford, Hancock, Fellows and Gale, 1995, p.18). In acknowledging the breadth of construction activity, Loosemore, Dainty and Lingard (2003) describe it as "*extremely diverse, ranging from simple housing developments to highly complex infrastructure projects*" (p. 3). Construction has been described as a labour-intensive industry (Langford *et al. 1995*), therefore positioning human resources as critical in the delivery of construction-based activities. Langford *et al.* (1995) suggest that a wide range of human resources are involved in the provision of construction, and these include (i) clients; (ii) consultants; and (iii) constructors. Clients include tenants and financiers, consultants include architects, engineers and surveyors, and constructors include the main contractor, subcontractors and suppliers. An overview of the provision of construction and main groupings of human resources is shown in Figure 1-1. While Figure 1-1 appears to delineate each group separately according to a linear construction process, in reality the construction process is a dynamic process. Construction projects have been described as "*chaotic, ambiguous, complex and unpredictable multi-party coalitions*" (Ness and Green, 2012, p.32).

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Figure 1-1. Overview of the provision of construction and main groupings of human resources (Langford, Hancock, Fellows and Gale, 1995, p.3).

The construction industry has a poor public image in the eyes of its workforce, or potential workforce (International Labour Organization, 2001) and this is of concern in a shrinking labour market (Loosemore *et al.* 2003). Given that construction is a labour-intensive industry in which human resources are critical in the delivery of construction-based activities, an

inability to recruit or retain workers may impact upon construction organisations' ability to meet project deliverables, and may jeopardise its ongoing sustainability. The construction industry has been described as dirty, difficult and dangerous (International Labour Organization, 2001). Contract-based project work requires construction workers to continually relocate from place to place as the work moves around, and move from contractor to contractor depending on which organization successfully bids for work. This type of employment arrangement may lead to a high level of job insecurity, particularly when the worker is employed on a casual basis (Loosemore *et al.* 2003; Ness and Green, 2012). The majority of construction activity work takes place on site, whereby workers may be geographically isolated, have little access to amenities, and are required to work in all weather conditions. Finally, the construction industry is perceived to be male-dominated whereby a discriminatory 'macho' culture commonly operates (Dainty and Lingard, 2006; Loosemore *et al*, 2003; Ness and Green, 2012). In relation to the male-dominated culture, Lingard and Francis (2005a, p.1046) contend that "*the traditional work patterns prevalent in the construction industry are based on gendered assumptions about the nature of work and the ever-availability of employees.....men's time is devoted to work while women's time is devoted to managing the home and family*".

1.3 Australian construction industry

In Australia, the construction industry is one of the largest employing industries. As at May in 2009, there were 984,100 people employed in the construction industry, which represented 9.1% of the total workforce, and was the fourth largest employing industry in Australia (Australian Bureau of Statistics, 2010a). Two groups of workers exist within the construction industry, operating in distinct labour markets. Managerial, professional, administrative and supervisory workers (e.g. foremen) are salaried, meaning that they are paid a fixed annual salary irrespective of the hours they work each week. In contrast, skilled and unskilled tradespeople and labourers (site-based, blue collar workers) are paid an hourly wage. This is based upon an hourly rate up to a standard work week, above which penalty rates are paid for overtime. These workers are engaged by the main contractor to carry out construction activity. Research suggests that irrespective of worker group, whether it be blue or white collar, workers of the Australian construction industry routinely work long hours. The construction industry is known as a long working hours industry in which weekend work is considered standard. Long working hours has been defined as 45 hours a week or more, which includes overtime, both paid and unpaid (van Wanrooy and Wilson, 2006, p.350). Lingard and Francis (2004) found that the average number of hours worked each week was 62.5 among site-based respondents in direct construction activity, 56.1 hours among respondents who work mostly in a site office and 49.0 hours among respondents in the head

or regional office. In another study, Lingard, Francis and Turner (2010a) found that 76.3% of respondents worked more than 45 hours per week, and 59.1 % of respondents worked more than 50 hours per week. Much of the research conducted to date in the Australian construction industry has investigated professional's (white collar workers) experience of work-life interaction (for example, Lingard and Francis, 2004, 2005b, 2006, 2007). While some research has investigated the work-life experiences of blue-collar workers (for example, Lingard *et al*. 2010a, 2010c; Lingard, Townsend, Bradley and Brown, 2008), blue collar workers remain an understudied population and work-life experiences of these workers is not well understood. Further investigation of the work-life experiences of both blue and white collared workers employed in the construction industry is required, so that strategies which assist a diverse range of workers can be developed.

In Australia, the construction industry is faced with a shortage of skilled labour (Francis and Prosser, 2012; Lingard, Francis and Turner, 2008). Australia has an ageing population due to falling birth rates and increased life expectancy. The trend of an ageing population coupled with lower fertility rates functions to reduce the supply of younger workers joining the workforce, leading to a shrinking workforce. These demographic changes will intensify the competition for skilled workers, as experience is lost through retirement and fewer new entrants. These demographic trends indicate that the economic wellbeing of businesses depends not only on attracting new staff but also on retaining these workers. Given its poor public image, organisations will need to look for new ways of recruiting new staff, and retaining their existing staff.

1.4 Work-life experience of construction-based workers

Much of the work-life research conducted within the Australian construction industry has focused on work-life conflict (for example, Lingard and Sublet, 2002; Lingard and Francis, 2004, 2005b; 2006, 2007; Lingard *et al,* 2010a, 2012). Research has indicated that workers of the Australian construction industry experience high levels of work-life conflict (Lingard and Francis, 2005a; Lingard and Francis, 2007; Lingard *et al.* 2010a). Work-life conflict occurs when "*role pressures from the work and non-work domains are mutually incompatible in some respect*" (Greenhaus and Beutell, 1985, p.77). Work-life conflict is linked with negative work-related outcomes, non-work related outcomes, and stress-related outcomes, as shown in Figure 2-1. Some of the work-related outcomes are decreased job satisfaction and job performance, and intention to turnover. Non-work related outcomes include a decrease in life satisfaction and family satisfaction. Stress-related outcomes include depression, burnout and substance abuse. The conflict concept is further described in Section 2.10.1 of Chapter 2.

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Figure 1-2 .Negative outcomes of work-family conflict (Allen, Herst, Bruck and Sutton, 2000, p. 280).

Research focused on conflict in the Australian construction industry has investigated the antecedents of conflict. For example, Lingard and Francis (2004) found that workers experience high levels of work–family conflict, which is predicted by excessive job demands, including long and irregular work hours. Another investigation into the construction industry indicated that competitive tendering (MacKenzie, 2008) and tight project programming (Lingard *et al.* 2010b) led to long working hours, which impacted on work–life stress. A further study indicated that hours worked, supervisor support, and work flexibility impacted workers' level of conflict (Lingard *et al*. 2010a). Research in the Australian construction industry has also indicated that work–life conflict acts as the linking mechanism between work schedule demands and employee burnout (Lingard and Francis, 2005a), as shown in Figure 1-3. Additionally, certain job characteristics, such as supervisor support, moderate the relationship between work–life conflict and employee burnout (Lingard and Francis, 2006), as shown in Figure 1-4.

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Figure 1-3. Work-family conflict as a mediator in the schedule demand-burnout relationship (Lingard and Francis, 2005a, p.736).

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Figure 1-4. Support as a moderator in the work-family conflict-burnout relationship (Lingard and Francis, 2006, p.186).

While there has been a considerable focus on conflict within the Australian construction industry, some research has investigated work-life interaction from an alternate lens. Some studies have reviewed the barriers to work life balance and the supports (also referred to as resources) required to enable work-life balance. Turner, Lingard and Francis (2009) found that project culture, resource allocation and phase of the project were barriers to work-life balance, while project delivery model, flexibility of working hours, and management support acted as facilitators to work-life balance. Work-life balance is described as "*the extent to which an individual is equally engaged in – and equally satisfied with – his or her work role and family role*" (Greenhaus, Collins and Shaw, 2003, p. 513). Lingard and Francis (2005a) found that workers' needs vary according to gender, age and stage of family and that work-

life supports of workers should move beyond a one-size-fits-all approach, and cater for a diverse workforce.

Lingard *et al*. (2010c) moved beyond the conflict paradigm, and investigated work-life interaction from an alternate lens. The research indicated that work-schedule fit mediated the relationship between work resources and work-to-family enrichment, as shown in Figure 1-5. Work-family enrichment is defined as "*the extent to which experiences in one role improve the quality of life in the other role*" (Greenhaus and Powell, 2006, p.73). Lingard *et al*.'s (2010c) research was important for two reasons. Firstly, the research sought to move beyond the conflict construct in investigating the work-life experience of workers. This is of significance, as previous research has clearly identified that workers in the construction industry experience high levels of work-family conflict. It could be argued therefore, that further research focussing on the conflict concept would not progress the understanding of worker's experience of work-life interaction. Secondly, the research highlights that workers' experience of work-life interaction is a subjective assessment of experience. Lingard *et al*. (2010c, p.477) acknowledged that "*our results also highlight the role of perceptions of work-family fit as a linking mechanism between job-related resources and work-to family enrichment*". This is consistent with the notion that experience is essentially a subjective experience which is derived from a cognitive appraisal of the situation and circumstances (Edwards and Rothbard, 1999; Hill, 2005; Moen *et al.* 2008).

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Figure 1-5. Work resources, work-schedule fit and work-to-family enrichment mode (Lingard *et al*. 2010c, p.471).

While research on the work-life experience of workers conducted in the Australian construction industry has primarily focused on the conflict concept and has utilised cross-sectional survey based designs (for example, Lingard, 2004; Lingard and Francis, 2004, 2005a, 2005b, 2007, 2008; Lingard and Lin, 2004; Lingard and Sublet, 2002), it has provided an important base from which to progress theory development and understand the experience of work-life interaction of workers in the Australian construction industry. For example, research has identified that a range of work-based demands (Lingard and Francis, 2005a) and work-based resources impact upon workers' experience of work-life interaction (Lingard *et al.* 2010c). However, it is not well understood what demands and resources are experienced by workers in the construction industry. Furthermore, while previous research has considered work-schedule fit in the context of work resources and work-to family enrichment (Lingard *et al*. 2010c), fit has yet to be considered from a perspective which

incorporates both demands and resources. The imperatives for considering work-life fit from a demands and resources framework are outlined in Chapter two.

1.5 Research problem

Workers in the construction industry experience a range of demands including long working hours, overtime hours, and weekend work. These demands have been linked to work-family conflict (Lingard, Francis and Turner, 2010a). The experience of work-family conflict by Australian construction workers is of concern as conflict is associated with negative outcomes for the worker and the organization. Conflict between work and family life has been associated with lower levels of life satisfaction (Lambert, Kass, Piotrowski and Vodanovich, 2006), job satisfaction (Kinnunen, Geurts and Mauno, 2004) and organizational commitment (Thompson, Beauvais and Lyness, 1999) as well as higher levels of turnover intention (Karatepe and Kilic, 2007) and job withdrawal behaviours, such as absenteeism and tardiness (Mesmer-Magnus and Viswewvaran, 2006). While schedule-based work demands have been identified in the literature, it is largely unknown what other demands are experienced by workers of the Australian construction industry, and to what extent workers experience these demands. Similarly, workers in the construction industry also experience a range of resources such as supervisor support, flexibility and work schedule control (Lingard, Francis and Turner, 2010c), however it is not clear what other resources workers call on to meet their demands.

There has been growing recognition in the work-life literature that the roles individuals hold are not only limited to 'worker' and 'family member' (Barnett, 1998; Moen, 2011; Morris and Masden, 2007; Pocock, Williams and Skinner, 2009, 2012; Voydanoff, 2005). Individuals operate within a number of domains which exist beyond work and family, and this includes community. The inclusion of 'community' in the work-life paradigm has been framed using a systems approach (Morris and Madsen, 2007; Voydanoff, 2001). The systems approach to work-family-community contends that one domain does not exist independently of the other domains. Rather, the domains are fundamentally linked. That is, the experience of a demand or resource in one domain may interact with the experience of a demand or resource in another domain. Therefore, in seeking to explore the demands experienced by workers of the construction industry, and identifying what resources are required to meet these demands, all domains in which the individual participates must be considered.

According to the subjective cognitive appraisal framework (Lazarus and Folkman, 1984) individuals perceive experiences differently. Based on this view, some researchers have recognised the subjective component of the work-life experience (Hill, 2005; McCubbin and

Patterson, 1983; Moen, Kelly and Huang, 2008). Experience is essentially a subjective judgement which is derived from a cognitive appraisal of the situation and circumstances (Edwards and Rothbard, 1999; Hill, 2005; Moen *et al.* 2008). It is therefore probable that the meaning attributed to the experience of demands and resources will differ between individuals. This meaning may be shaped by individuals life stage or individuals characteristics.

Within the work-life literature, researchers have proposed a model of work-life fit. Work-life fit occurs when the individual perceives that he/she has the resources required to meet demands such that role performance is effective (Voydanoff, 2007). Pittman (1994) first introduced the notion of fit and its application to the work-family arena, and various researchers have sought to progress the development of this concept (see, for example, Barnett, 1999; DeBord, Canu and Kerpelman, 2000; Edwards and Rothbard 1999, 2005; Voydanoff, 2005, 2007). The work-life fit model has the capacity to be inclusive of all workers irrespective of family structure and occupational grouping, respond to the limitations of work and family by incorporating community, and offers a framework which recognizes that work-life interaction is a dynamic rather than static state. Moreover, the work-lift fit model views the person as whole rather than in parts, and moves the emphasis from work-family experience to work-life experience.

1.6 Research questions

The research sought to explore the demands and resources of workers in the Australian construction industry through the application of an innovative methodology, and to develop a work-life fit model which applied a demands and resources framework. Four questions were developed as a basis for the research:

1. **What is the underlying structure of work-life fit?**
    a. What demands and resources are associated with work-life fit in the construction industry?
2. **How do demand-resource profiles differ between workers?**
    a. How does life stage influence the configuration of demand-resource profiles?
    b. How do the demand-resource profiles of white collar (salaried) and blue collar (waged) workers differ?
3. **How do individual attributes influence demand-resource profiles?**
    a. How does role importance influence the configuration of demand-resource profiles?

b. How does segmentation-integration preference influence the configuration of demand-resource profiles?

4. **To what extent is Q Methodology a suitable methodology with which to explore the work-life experience of workers of the construction industry**?

1.7 Methodology

A mixed methods strategy was applied to address the research questions. Two methodologies were utilised, including Q Methodology and survey research. Chapter 4 introduces Q Methodology, and Chapter 5 outlines the development of the Q instrument. Together with Q Methodology, survey research was the second methodology utilised in the research. A survey of resources was conducted, and the development of the instrument is outlined in Chapter 6. A questionnaire seeking information on demographic and individual characteristics was also utilised in the research, which is outlined in Chapter 7. The philosophical approach which underpins the use of Q Methodology and survey research is outlined in Chapter 3. A copy of the research ethics approval obtained from the University is attached as Appendix 1a.

1.8 Research timeline

The research was conducted over a five year period, on a part time basis. The research commenced in February 2008 and submission of the thesis took place in November 2012. Figure 1-2 outlines the research timeline according to the research phases, which include the literature review, development of the research instruments, data collection, data analysis, and interpretation of findings. A detailed overview of the timeline for development of the research instruments is outlined in Chapter 5, Table 5-1.

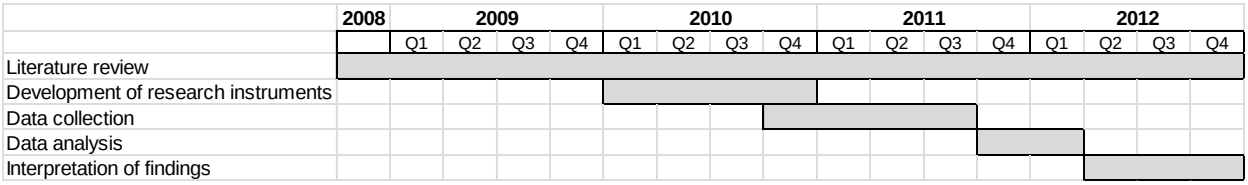

Figure 1-6. Research timeline.

1.9 Thesis outline

This section presents the structure and organization of the thesis. The thesis has 11 Chapters, and each Chapter is briefly described below.

Chapter 1 **Introduction:** This Chapter provides the background to the research and introduces the research problem. The research questions are presented, and the thesis structure is outlined.

Chapter 2 **Literature review:** This Chapter provides an overview of work-life research conducted in the Australian construction industry. Definitional constraints and limitations of the work-life literature are described. After this, the work-life fit concept is introduced, together with the various theoretical underpinnings from which the concept has been framed. Next, the position of demands and resources in the work-life literature is discussed. Finally, the Chapter outlines the segmentation-integration and role salience concepts and their relation to work-life fit.

Chapter 3 **Research approach:** This Chapter describes and justifies the research approach used to address the research questions. The Chapter starts by considering the philosophical views that influence research design. Following on from this, research approaches are explored. The Chapter then goes on to describe data collection techniques which are available to the researcher. Finally, the Chapter describes and justifies the research design and methodology which is applied to address the research problem.

Chapter 4 **Q Methodology:** Q Methodology is used in this research to reveal how workers engaged in the Australian construction industry experience demands in the work, family, and community domains. Given that Q Methodology has had limited application in the construction management and work-life domains, this Chapter outlines the various components of the methodology. This Chapter also provides context for the subsequent Chapter which outlines the development and piloting of the Q research instrument used in this study.

Chapter 5 **Development of the Q instrument:** This Chapter outlines the process by which the Q instrument was developed. Secondly, the Chapter describes how the Q instrument was pilot tested and what revisions were made to the initial instrument as a result of participant feedback. Finally, the Chapter outlines the results of the post hoc test which considered the reliability of the Q instrument.

Chapter 6 **Development of the resources instrument:** This chapter outlines the development of the resources instrument, starting by describing the method in which the resources were identified and verified. Following this, the process of developing and piloting the resources instrument is described. The Chapter concludes by outlining the changes which were made to the instrument as a result of participant feedback attained through the pilot study.

Chapter 7 **Development of the questionnaire:** This Chapter describes the development of the questionnaire instrument. The chapter starts by outlining the contents of the questionnaire. Following this, the piloting of the instrument is described and revision of items is outlined.

Chapter 8 **Methods and procedure:** This Chapter outlines the methods and procedure applied to the research. The Chapter begins by outlining the sampling method utilised, describes the participating organizations, and outlines when and where data collection was undertaken. The Chapter then goes on to explain how each of the three instruments were administered. Following this, the data analysis methods are described.

Chapter 9 **Results:** This Chapter presents the findings of the study. The Chapter starts with a description of the sample, followed by the results of the Q data analysis which identified the demand groups. Following identification of the demand groups, the findings of each group is reported according to a description of the demographic characteristics, care duties, role importance and segmentation preferences, demands experienced by members of the group, and resources required to meet high-ranked demands.

Chapter 10 **Discussion:** This Chapter discusses the results of the research and considers them in the context of the research questions. Following this, a new work-life fit model is presented.

Chapter 11 **Conclusion:** This Chapter presents the conclusions and recommendations of the research. The contributions of the research are outlined and topics for further research are proposed.

The thesis includes 18 appendices which are listed below. To facilitate cross referencing, the appendix number denotes the Chapter to which it refers. Chapters 2, 3, 4, 10 and 11 do not have appendices.

Chapter 1	Appendix 1a. Human Research Ethics approval
Chapter 5	Appendix 5a. Identification and verification of demands
Chapter 6	Appendix 6a. Identification and verification of resources
Chapter 7	Appendix 7a. Questionnaire
Chapter 8	Appendix 8a. Project information statement Appendix 8b. Consent form Appendix 8c. Demands recording matrix Appendix 8d. Resources recording matrix Appendix 8e. Q analysis procedure
Chapter 9	Appendix 9a. Ranking of demands for group one Appendix 9b. Ranking of demands for group two Appendix 9c. Ranking of demands for group three Appendix 9d. Ranking of demands for group four Appendix 9e. Role Salience: Factor analysis and internal consistency reliability analysis Appendix 9f. Resources considered important for group one to meet high ranked demands Appendix 9g. Resources considered important for group two to meet high ranked demands Appendix 9h. Resources considered important for group three to meet high ranked demands Appendix 9i. Resources considered important for group four to meet high ranked demands

1.10 Summary

This Chapter introduced the research problem, the research questions, and the methodology. The research timeline was then outlined. Finally, the Chapter presented the structure of the thesis. The next Chapter critically analyses the literature which is related to the research problem.

2 Chapter Two: LITERATURE REVIEW

2.1 Introduction

The previous Chapter provided an introduction to the research and established the research context. This Chapter will start by outlining the definitional constraints and limitations of the work-life literature. After this, the work-life fit concept will be introduced, together with various theoretical underpinnings from which the concept has been framed. Next, the position of demands and resources in the work-life literature will be discussed. Finally, the Chapter will outline the segmentation-integration and role salience concepts and their relation to work-life fit. The literature themes and their relevance to the thesis are summarised in Table 2-1.

Table 2-1. Literature themes and relevance to the thesis.

Section	Literature theme	Relevance to this thesis
2.2 – 2.3	Definitional constraints of the work-life domain	This section focuses on the definitional constraints and limitations of the work-life domain, and explores what impact this had had on supporting workers' work-life experience.
2.4	Theoretical limitations of the work-life research domain	This section examines the factors contributing to the slow progress of conceptual and theoretical advancement within the work-life domain.
2.5 – 2.12	Work-life fit	This section provides an overview of the work-life fit concept, and critically analyses models of work-life fit.
2.13 – 2.14	Demands and resources	Demands and resources are central components of the work-life fit model. The demand and resource concept is defined, and its relationship to work-life fit is described.
2.15 - 2.16	Individual attributes	Previous research has suggested that role importance and segmentation preferences influence the demands and resources experienced by individuals. These variables are defined, and their relationship to work-life fit is considered.

2.2 Definitional constraints

Within the literature, 'work-family' and 'work-life' are used, however these terms are often not explicitly defined by researchers. In cases where family is defined, the definition is often exclusive and narrow, which has implications for the samples used and subsequent generalizability of results. As such, these definitional constraints have limited the progress of the research domain. The following section outlines some of these limitations.

2.2.1 Work-Family or Work-Life

The terms 'work-family' and 'work-life' are referred to in the literature, however have served to add to the lack of consensus and progress of this field of research. For example, in some cases work-family conflict and work-life conflict have been used by different researchers to explain the same construct, while in other cases they refer to a distinct and separate construct (Greenhaus and Beutell, 1985; Reynolds, 2005). Similarly, work-life balance and work-family balance are also used by different researchers to explain the same construct, while in other cases they refer to a distinct and separate construct. Within this thesis, the term 'work-life' is used as an inclusive term which incorporates research which focuses more narrowly on work-family, and more broadly on work-life research.

Some researchers have explicitly chosen to use 'work-life' rather than 'work-family', as there is growing recognition that 'work-family' is somewhat limited in its focus (Bardoel, DeCieri and Santos, 2008). Behson (2002) advocates for a broader, more flexible approach to work-life instead of focussing attention solely on work-family. Similarly, Greenhaus *et al*. (2003) suggest that an examination of the broader concept of work-life would look at roles beyond work and family, and include leisure, self-development and community membership. Moen (2011, p.86) strongly contends that "*it is time to move beyond the 'work-family' frame that now constrains research and theory*". Moen (2011, p.86) suggests that the work-family construct is limited due to its exclusivity, in that it "*excludes other contexts: community, culture, economy, policy, biography, region, neighbourhood and workplace*". In contrast, 'work-life' considers that work is defined as paid employment and life is defined as everything else outside of work, such as family and community (Kossek and Lambert, 2005). In support of the 'work-life' framework, Brennan, Rosenzweig, Ogilvie, Wuest and Shindo (2007) argue that individual level outcomes must consider multiple domains beyond work and family. In this case, 'work-life' serves to respond to the call for inclusivity of all domains in contrast to 'work-family'. Despite the call for researchers to move beyond 'work-family' however, much of the current research continues to focus on this limited area (eg, Beauregard, Ozbilgin and Bel, 2009; Hammer, Kossek, Anger, Bodner and Zimmerman, 2011; Liu and Low, 2011;

Losoncz, 2011; Major and Morganson, 2011; Mulvaney, McNall and Morrissey, 2011) and routinely excludes domains and roles outside of work and family.

2.2.2 Family

The ABS (2008, p.35) defines family as "*two or more persons, one of whom is at least 15 years of age, who are related by blood, marriage (registered or de facto), adoption, step or fostering, and who are usually resident in the same household*". In contrast to the ABS (2008), the Organisation for Economic Co-operation and Development (2000, p.7) defines family as "*each household of one or more adults living together with and taking responsibility for the care and rearing of one or more children*". While these two definitions of 'family' differ, they both reflect a somewhat narrow focus of what constitutes family. The Human Rights and Equal Opportunity Commission raises the issue of exclusivity, that is, the definition of family should not be exclusive only of persons with children. Moreover, individuals may define family in far broader terms and may include local communities, friends, and work colleagues. The Human Rights and Equal Opportunity Commission (2005, p.4) note that "*social and economic changes over the past decade have also had an effect on family composition and characteristics. Australian families are more diverse, more complex and more dynamic than ever before. There has been a decline in couple families with children, counterbalanced by a rise in couple families without children, lone parent families, and other family forms including same sex couple families, non-resident parents, step and blended families*". While there has been a call to redefine and extend the definition of family (Barnett, 1998; Hamilton, Gordon and Whelan-Berry, 2006; Moen *et al.* 2008; Pocock, Williams and Skinner, 2012), it would appear that this narrow definition of family is also reflected to a great extent in the work-life literature (for example, Edwards and Rothbard, 2000; Morris and Madsen, 2007; Rothausen, 1999).

A universal definition of 'family' has not been used in the work-life literature, however the most common definition is inclusive of workers who are married or living with a partner and those with children. For example, Morris and Madsen (2007, p.445) define family as "*all related people in a family household, which consists of a minimum of two members related by blood, adoption, marriage/remarriage, and a householder who owns or rents the residence*". Similarly, Edwards and Rothbard (2000, p.179) define family as "*persons related by biological ties, marriage, social custom, or adoption*". Research samples have reflected this narrow focus of 'family', and have often included only working parents who are part of intact nuclear families. For example, Perrone, Aegisdottir, Webb and Blalock (2006) investigated the interrelationships between work and family commitment, work-family conflict, coping and satisfaction with work and family roles. The sample description stated that "*All participants held full-time jobs outside the home and were married*" (p.289). Due to a narrow

focus of 'family', workers who are single, single-parents, or childfree are under-represented groups of workers in work-life research (Casper, Eby, Bordeaux, Lockwood and Lambert, 2007; Parasuraman and Greenhaus, 2002; Pocock *et al*. 2012). In order for research to progress and be inclusive of all workers, irrespective of family status and structure, the definition of family requires re-consideration. There has been some attempt to widen the definition of family so that it is inclusive. For example, Pocock *et al*. (2012, p.397) proposed a definition that views family as "*a group who pool social life, money and time to sustain their everyday life*". Similarly, Barnett (1998) proposed the term 'work/social system' to replace 'work/family' to reflect that "*workers have needs and responsibilities to many people and activities beyond those in their immediate families*" (p.126).

The ABS (2009) report that over the last 20 years, the proportion of the population living in one person households increased from 9% to 12%, and over the next 20 years is projected to increase to 16% (from 1.6 million single households in 1996 to 3.4 million single households in 2021). If research therefore, continues to focus solely on workers who are part of an intact family, then the work-life needs of individuals who fall outside of an 'intact family' will largely be disregarded. Hamilton, Gordon and Whelan-Berry (2006, p.410) contend that "*work-life conflict is a type of interrole conflict and thus can involve conflict between work and various life roles, not just parent or spouse, but whichever roles are most salient to an individual's identity*". It is therefore critical that research in the work-life domain investigate the unique sources of work-life conflict for single adults, and identify appropriate strategies to mitigate such conflict.

2.3 Beyond work and family

As highlighted in Section 2.2.1, there has been growing recognition in the literature that the roles individuals hold are not only limited to 'worker' and 'family member' (Barnett, 1998; Moen, 2011; Morris and Masden, 2007; Pocock *et al.* 2009, 2012; Skinner, Williams and Ichii, 2009; Williams, Pocock and Bridge, 2009; Voydanoff, 2005). Individuals operate within a number of domains which exist beyond work and family, such as community. In recognition of this, the Community, Work and Family journal was established in 1998 to provide "*a place in which the interconnections between community, work and family and between research, practice and policy can be explored"* (Kagan and Lewis 1998, p.5). Many contributions to this journal deal with at least two of the three domains of community, work and family, however few cover all three domains (Pocock *et al.* 2012). Despite the growing emergence of work, family and community, "'*work and family' have received greater attention than the larger terrain of work, family and community*" (Pocock *et al*. 2012, p. 394).

The inclusion of 'community' in the work-life paradigm has been framed using a systems approach (Morris and Masden, 2007; Voydanoff, 2001). For example, Voydanoff (2001) draws on Bronfenbrenner's (1979, 1989) ecological systems framework to conceptualise the work-family-community context. Voydanoff (2007) refers to a mesosystem as consisting of the interrelationships among the microsystems in which an individual participates. Figure 2-1 shows the four mesosystems which can be formed through the connections amongst work, family and community microsystems. Three of these consist of the relationships between two microsystems, work-family (a), work-community (b) and family-community (c). The work-family-community mesosystem (d) is created when an individual participates in all three microsystems. The systems approach to work-family-community supports Kanter's (1977) critical research on work and family, where she referred to the myth between the separate worlds of work and family life. That is, one domain does not exist independently of the other domain. Rather, the domains are fundamentally linked. The recognition of the interdependence between domains has led researchers to recognize the dynamic rather than static nature of these relationships. This dynamic nature of the work-family-community interface highlights a critical point in that theory development must consider the whole and the interrelation between the parts. In progressing theory, work, family and community must be explored in the context of work-life interaction.

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Figure 2-1. Relationships between the work, family and community microsystems (Voydanoff, 2007, p.10).

Despite the growing interest in community among work-life researchers (for example, Bookman, 2005; Voydanoff, 2001), "*research has been scattered and noncumulative, owing in large part to the absence of an agreed-on definition of community*" (Barnett and Garies, 2009, p.1002). Some researchers define 'community' based on place while others focus on social relationships. For example, Pocock *et al*. (2012, p.397) define community using a social relationship framework: "*the relationships of support and/or interaction between people beyond the household or workplace, which may be based on place, shared interest or identity. Such communities are often geographically based, may be of different strengths and may not be always positive in effect".* In contrast, Morris and Masden (2007, p.445) use a place-based framework to define community; "*a geographically bound space often identified as a place to work and live and have most basic human needs like health, safety, and well-being met*". Using a place-based definition of community is limited in its ability to explain the holistic relationship between work and life, as it excludes important social connections which may act as valuable resources for individuals, assisting them to meet their demands. On this

basis, 'community' as defined by social relationship is preferred, and this is discussed further in Section 2.13.3 of this Chapter.

2.4 Theoretical limitations

As outlined in the previous section, definitional constraints have hampered the progress of work-life research and theory development. Progress of work-life research has also been "*hampered by the lack of an inclusive model for understanding the processes by which work and family variables influence one another, a model that is theoretically grounded and integrates the major paradigms from these several disciplines*" (Barnett, 1998, p.126). Within the work-life domain, a wide range of theories have been applied to research, however these are diverse and more often than not, disconnected (Allen *et al*. 2000). For example, some of these theories include conservation of resources theory (Hobfall, 1989), scarcity hypothesis (Goode, 1960), role conflict theory (Kahn, Wolfe, Quinn, Snoek, Rosenthal, 1964), ecological systems framework (Bronfenbrenner, 1979), social exchange theory (Blau, 1964), person-environment fit theory (Holland, 1959), and family resilience theory (Walsh, 1996). Theories relevant to work-life fit will be outlined in a later section of this chapter. Furthermore, "*where theory is attempted it is often mirco-level or considers only work and family and the nature of relations between these two spheres*" (Pocock *et al*. 2009, p.3). The lack of an inclusive theoretical model by which to progress work-life research is further hindered by the vastness of the topic and by the multi-disciplinary, multi-pronged approach to research.

The range of the work-life domain extends across numerous contexts (Bardeol *et al*. 2008; Barnett, 1998; Moen, 2011). Barnett (1998, p.126) comments that "*researchers investigating 'work/family' issues study a dazzling array of topics, including schedule conflict, time spent in house hold labor, child care and elder care, psychological distress, physical health, marital adjustment, parenting styles, quality of home environments, and children's development problems*". Similarly, Moen (2011, p.82) comments that "*'work-family' connotes a lot of things: balance, spillover, conflict, enrichment, integration, enhancement, overload, and stress*". However, Barnett (1998, p.126) contends that "*there is no agreement what constitutes work/family.* This lack of agreement *"is both the result and the cause of the noncumulative nature of the research in this field" (*Barnett, 1998, p.128). As it stands, it is not well understood how or whether the various paradigms are related, nor is there a common theory by which these paradigm are linked (Frone, 2003).

Adding to this challenge is the multidisciplinary, multipronged approach to the study of work-life, as shown in Figure 2-2. Barnett (1998, p.128) suggests that there is no "*guiding theory to light the way*", and as a result there is a "*proliferation of 'predictors' and 'outcomes'*" which

tend to vary by the researcher's discipline. For example, Barnett (1998) asserts that organizational researchers look at outcomes such as productivity, absenteeism and turnover. Psychologists focus on individual-level outcomes as such physical and mental health, schedule conflicts, time in household activities and childcare tasks, leisure time, reports of work-to-family and family-to-work conflict, and marital quality. Occupational health professionals focus on work-related physical health outcomes and stress for workers and their families. Sociologists consider the effects of workplace conditions on families and individuals (Allen *et al.* 2000; Barnett, 1998). Voydanoff (2007, p.4) also suggests that the diversity of perspectives in relation to the study of work-family-community has disadvantages. This diversity "*may reflect a lack of theoretical focus that derives from the multiplicity of disciplines that conduct research on the work, family and community microsystems. These include sociology, psychology, organizational behaviour, family science, human development, social work, gerontology, family therapy, law and occupational health. This lack of focus makes it difficult to develop comprehensive yet manageable theoretical frameworks for research*".

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Figure 2-2. Multidisciplinary, multipronged approach to the study of 'work-family' and 'work-life' (Barnett, 1998, p.129).

2.5 Work-life fit

Work-life fit is a recent construct which has emerged in the work-life domain. Clarke, Koch and Hill (2004, p.138) contend that "*work-family fit is still a relatively new concept in the work-family literature, and its specific dynamics have not been fully explored*". However, this construct is inconsistently defined and lacks a consistent theoretical model by which to progress the construct. The following sections will outline the theoretical underpinnings by which work-life fit has been positioned, as well as identify the strengths and limitations of these models. Firstly, Barnett's (1998) work-family model will be outlined. After this, models which position work-life fit within a person-environment fit framework will be reviewed. Following this, work-family fit utilising a risk management framework will be considered. After this, the relevance of ABCX and family resilience frameworks to the work-life fit concept will be explored. The section will then consider work-life fit drawing on conflict and facilitation frameworks. Fit within ecology of life course framework will then be reviewed. This section will conclude with an exploration of work-life fit within a demands and resources framework.

2.6 Barnett's (1998) work-family model

Barnett (1998) sought to address some of the limitations of the work-life domain, by developing a model which is "*theoretically grounded and integrates the major paradigms*" (p.126). In responding to the narrow focus of work and family, which excludes community and other non-work activities, Barnett (1998) referred to 'work/social system', and proposed a comprehensive model which has "*four main building blocks, or sets of variables: distal conditions, proximal conditions, outcomes and fit*" (p.163). Distal conditions refer to all aspects of the work domain, including everything from global economics to specific workplace policies and practices. For example, work hours, income, and job security. Proximal conditions represent the dynamics of home, family and personal life. For example, it encompasses number of children, household tasks, values, and members of a worker's social system such as parents, friend and members of the community. It also encompasses characteristics such as age, gender, and parental status. Fit refers to workers' ability to realize their work/family strategies given the existing distal conditions and the workers' characteristics. Outcomes refer to the range of dependent variables studied under the work-family domain, such as physical and mental health. In Barnett's (1998) model, fit is positioned as a mediator between distal and proximal conditions, and outcomes as shown in Figure 2-3.

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Figure 2-3. Fit positioned as a mediator in Barnett's (1998, p.171) work-social system model.

Barnett's (1998) conceptual model has been criticised (for example, Grzywacz and Bass, 2003) on the grounds that fit was conceptualised as the combination of work-family enhancement and work-family conflict. This however, appears to be largely unwarranted, as Barnett (1998) contends that the model "*does not assume inevitable conflict between the work-place and the worker*" (p. 164). Rather, fit refers to a dynamic process in which workers strategies change in response to changes in workplace demands or opportunities, as well as in the needs or demands of the workers themselves. In this context, fit may be experienced as compatibility between distal condition and proximal conditions, or as conflict in cases where there is a lack of compatibility. Barnett (1998, p.172) acknowledges that "*this model is not exhaustive nor complete*". Despite such criticisms, this model is important for three reasons. Firstly, the model seeks to provide a framework from which to integrate and progress research in the work-life domain. Secondly, the model provides an inclusive context which considers multiple domains which reach beyond work and family. And thirdly, the model incorporates a systems perspective which considers individual's as a whole rather than as parts, such as 'worker' or 'parent'. This model considers "*individuals experience through their enactment of work, family and community roles*" (Barnett, 1998, p.147).

2.7 Work-life fit within a person-environment fit framework

This section will introduce the work-life fit construct which draws upon person-environment fit theory. First, an overview of person-environment fit theory will be outlined, followed by an explanation of how this model has been applied to the work-life fit construct. An overview of the fit model will then be provided, followed by examples of how it has been applied in research settings.

2.7.1 Person-environment fit theory

Person-environment (P-E) fit theory has been commonly applied in organizational stress research (Edwards, 1996; Edwards and Cooper, 1990). P-E fit theory predicts that a perceived match between the person and environment is beneficial to mental and physical well-being, whereas a perceived mismatch leads to stress and produces mental and physical strain (Edwards, Caplan and Harrison, 1998; French, Caplan and Harrson, 1982). The concept of person-environment fit originates from theories of personality of Lewin (1951) and Murray (1938), which emphasize the interactions between the individual and his/her environment as the central determinants of behaviour (Teng and Pittman, 1996, p.14).

P-E fit theory incorporates two features regarding person and environment. The first feature of the theory is the differentiation between the objective and subjective person and environment. The objective person refers to the attributes of the person that actually exist, whereas the subjective person is the person's perception of his/her own attributes (Edwards and Rothbard, 1999), also referred to as the person's 'self-concept'. The objective environment implies physical and social situations and events as they exist independent of the person's perceptions, whereas the subjective environment refers to situations and events as perceived by the person (Edwards and Rothbard, 1999).

The second feature of the theory is the differentiation between the two versions of P-E fit (French *et al*. 1982). The first version is the fit between the values of the person and the supplies in the environment available to fulfil values (Edwards, 1992; French *et al.* 1982), referred to as supplies-values fit. In this model, 'values' refer to the desires of the person and therefore signify a general construct that incorporates interests, preferences, and goals (Edwards, 1992; Schuler, 1980). 'Supplies' refer to aspects of the environment that may fulfil the person's values (French *et al.* 1982). Supplies include "*extrinsic rewards, such as pay and recognition, and intrinsic rewards derived from activities or experiences in the environment*" (Edwards and Rothbard, 1999, p.88). The second version of P-E fit involves the fit between the demands of the environment and the person's abilities (French *et al*. 1982; McGrath, 1976), referred to as demands-abilities fit. In this model 'demands' are

"*qualitative and quantitative requirements faced by the person and include objective demands (e.g., commute time, length of workweek) and socially constructed norms and role expectations*" (Edwards and Rothbard, 1999, p.88). 'Abilities' comprise "*skills, energy, time, and resources the person may muster to meet demands*" (Edwards and Rothbard, 1999, p.88). Teng and Pittman (1996) are widely cited in the literature as introducing the concept of fit to the work-life domain. Teng and Pittman (1996) applied components of P-E fit theory to the work-life fit construct, and this is outlined in the following section.

2.7.2 Teng and Pittman' s (1996) conceptual model

Teng and Pittman (1996) consider the work and family domains as two interconnected microsystems, and the interface between the two domains as a mesosystem. Drawing on Bronfenbrenner's (1979) ecological systems approach, the work-family fit construct addresses the interactive nature of this mesosystem and conceptualizes it in terms of the fit between the two microsystems (Bowen and Pittman, 1993). Teng and Pittman's (1996) conceptual model of fits extends "*the focus of the interaction between the individual worker and the job in P-E fit theory to the interaction between the family and the work-place of the family member*" (Teng and Pittman, 1996, p.16).The fit model assumes that a good fit between the demands of work and a family's abilities /expectations regarding these demands, and a good fit between the rewards/supplies from work and a family's needs/goals will have beneficial effects on individual and family well-being (Bowen and Pittman, 1993; Pittman and Bowen, 1995; Pittman and Kerpelman, 1996). These two dimensions of fit are shown in Figure 2-4. The model also contends that fit may change over time, as the exchange process between work and family is dynamic rather than static (Teng and Pittman, 1996).

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Figure 2-4. Dimensions of work-family fit (Teng and Pittman, 1996, p.17).

As shown in Figure 2-4, Teng and Pittman's (1996) model of fit has four components. Two of these components are related to work and two to family. The work components are work-demand and work-rewards/supplies, and the family components are the family-abilities/expectations and family needs/goals. An overview of the four components is outlined in Table 2-2.

Table 2-2. Components of Teng and Pittman's Work-family fit model (Teng and Pittman, 1996).

Domain	*Model components*	*Component overview*	*Component features*
Work	Work-demand	Structure, technical and psychosocial demands required by the job.	Work load, work hours, shift work, travel
	Work-rewards / supplies	Rewards / supplies provided to the worker as well as to his/her family.	Opportunities for personal development, work support from supervisors and co-workers, financial benefits, family supportive polices, such as flexibility, childcare assistance
Family	Family-abilities / expectations	Competencies of the family as a unit for responding to work demands of its members.	Individual and family-related variables, including family coping resources, family cohesiveness
	Family needs / goals	Primary functions of the family and its developmental tasks as well as the aims and preferences valued by individual family members.	Different tasks in life cycle stages, family members' standards and expectations for their work and family roles, such as financial security, caring for children, home management.

In Teng and Pittman's (1996) model of fit, the interaction process between work and family domains is conceptualized as an overall exchange process between the two domains along dimensions of work demands versus a family's abilities/expectations regarding these demands, and the rewards/supplies from work and family needs/goals. Work-family fit is described as "*the outcome of this exchange process and reflects the level of congruence between what is required of the family/by a family member's job and what the family expects and is able to provide, and between what the job can provide to the family and what the family expects to get from the job in order to meet the family's needs and goals*" (Teng and Pittman, 1996, p.17). Figure 2-5 shows the relationship between work-family fit as well as fit components in the work and family domains. In this model, fit mediates the relationship between the work and family domains and outcomes. Given that the model put forward by Teng and Pittman (1996) was a conceptual model, it was suggested that likely outcomes as indicated in the model could be family life satisfaction, level of family role strain, job satisfaction, work commitment.

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Figure 2-5. Relationship between work-family fit as well as fit components in the work and family domains (Teng and Pittman, 1996, p.19).

Teng and Pittman's (1996) conceptual model of fit was a critical model from which to progress the fit construct, as it positioned fit within a systems framework, as well as contended that demands and rewards from the work domain interact with abilities/expectation and needs/goals from the family domain to inform fit, and which are associated with both family and work outcomes. One of the major strengths of this model is that it asserts that the family domain is a critical component of work-life interaction, unlike other models which focus primarily on the work domain and afford little attention to the family domain. Another major strength of the model is that it recognizes work-life fit as a dynamic rather than static construct. One of the limitations of the model, however, is the exclusion of the community domain. DeBord, Canu and Kerpelman (2000) address this limitation, and this is outlined in the next section.

2.7.3 Progressing Teng and Pittman's (1996) conceptual model

DeBord *et al*. (2000) used Teng and Pittman's (1996) model of work-family fit as a theoretical base for exploring the experiences of individuals moving from welfare to paid work. This was a critical step in applying this conceptual model of fit in a research setting. Moreover, the model was applied to an understudied subset of the workforce and this is of note, as the work-life research has been criticised for using homogenous samples, limited by family structure and occupational grouping (for example, Casper, Eby, Bordeaux, Lockwood and Lambert, 2007, Eikhof, Warhurst and Haunschild, 2007; Pocock *et al*. 2012).

In investigating the fit between work and family for parents transitioning from welfare to work, DeBord *et al*. (2000) reported that the sample consisted primarily of single working parents. Single working parents do not have access to the same resources as partnered workers, in terms of dual income and/or support and assistance for childcare and home-related chores. DeBord *et al.* (2000) found that single working parents call on supplies form the community such as child care and transportation, and experienced demands originating from the community such as school, job training and church related activities. In their research, DeBord *et al.* (2000, p.320) found that "*when there is a lack of fit between community demands and family abilities, the imbalance can affect the fit between work demands and family abilities*". In light of these findings, Teng and Pittman's (1996) model of fit was extended to include community demands and supplies, as shown in Figure 2-6. The extended model of 'work-family fit' may have been more aptly referred to as 'work-life fit'

which recognizes the extension of the model into multiple domains beyond just work and family.

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Figure 2-6. Work-family fit model incorporating the community domain (DeBord *et al*. 2000, p.314).

Like DeBord *et al.* (2000), Brennan *et al.* (2007) also investigated an under-studied subset of the workforce, working parents of children with emotional or behavioural disorders. Brennan *et al.* (2007, p.121) found that "work-family fit" for this subset of workers was "*facilitated through accessing and accepting support provided by family, friends, social networks, and formal resources. The most frequently used resources include personal counselling, parent support groups, school-based crisis teams, and respite services*". Brennan *et al.* (2007, p.121) suggest that resources that are utilised by other families (eg. child care centres and home cleaning services) are often not used by parents of children with serious emotional or behavioural challenges, as these children have difficulty tolerating or adjusting to changes or dealing with unfamiliar people in their surroundings. This finding is consistent with findings by DeBord *et al*. (2000) which suggest that parents transitioning from welfare to work also call on specific resources to assist in meeting demands. While Brennan *et al.* (2007) did not investigate fit using Teng and Pittman's (1998) or DeBord *et al's* (2000) framework as a theoretical base from which to progress or extend the model of fit, two critical issues emerge. Firstly, these studies identify that different cohorts of workers call on specific resources to meet their demands. Therefore studies limited to samples of workers who are professionals, managers and administrators and who are part of an 'intact' family will fail to identify these distinctions. Secondly, these studies identify that the community domain plays an important role in work-life fit. Excluding 'community' in the model of fit limits the applicability of the model to those workers who call on community based resources to meet their demands.

2.8 Work-family fit utilising a risk management framework

Lingard and Francis (2009) developed a conceptual model of work-family fit which draws on Teng and Pittman's (1996) model of work family fit. In this model, work demands and family resources, together with work rewards and family goals and needs, are put into a risk framework, as shown in Figure 2-7. According to the conceptual model, where family resources are low but job demands are high, there is an absence of 'fit' and a risk of work-family conflict. Where family goals and needs are high and work rewards (for example in terms of pay and work-life benefits) are low, there is a similar lack of fit and the opportunity for work-family enrichment is reduced. In the model, absence of fit (mis-fit) is conceptualised

as a high risk of work-family conflict and limited opportunity for work-family enrichment. While this conceptual model provides an additional lens from which to consider the work-family fit concept, it is limited by the exclusion of community demands and resources. Development of the model is needed so that family goals and needs, family resources, work demands, and work rewards are clearly defined. Furthermore, development of the model could investigate how the resources, demands and rewards would be quantified into categories such as very low, low medium, high and very high.

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Figure 2-7. Work-family fit model utilising a risk management framework (Lingard and Francis, 2009, p.156).

2.9 ABCX and family resilience framework

Various researchers within the work-life domain have drawn on ABCX theory and family resilience theory from which to frame their conceptual models. A brief overview of each theory is outlined, and its applicability to the fit construct is described. Of particular relevance is the subjective meanings ascribed to the experience of demands and resources and their relationship to perceptions of fit, as well as the systems approach which is applied to the framework.

2.9.1 ABCX theory

The ABCX theory (R. Hill, 1949) is derived from family systems theory and examines family dynamics as they relate to family adjustment. Classic ABCX theory (R. Hill, 1949) contends that (A) stressors and (B) resources (informal and formal social supports) interact with (C) meanings given to the stressor, to affect (X) crisis, a continuous variable denoting the amount of disruption, disorganization or incapacity. According to ABCX theory, the family's perception of the stressor ('C') greatly influences how well the family copes with the stressful event. Perception, therefore, can interact with the family characteristics to either facilitate or impede family adjustment. The major components of ABCX theory are shown in Figure 2-8. McCubbin and Patterson (1983) made an additional contribution to R. Hill's (1949) original model, referred to as double ABCX theory. McCubbin and Patterson (1983) contend that families may experience a 'pile up' of stressors when faced with a major stressor. Pile-up stressors are additional stressors above and beyond the major stressor. These pile-up stressors can be, for example, other past stressors with which the family needed to cope (eg. accommodating a child's learning disorder) or the result of a family's attempt to cope with the major stressor (eg. learning a new language to prepare for an international work

assignment). These ‘pile-up stressors’ may originate from the individual family members, the family system, and the community to which the family belongs (McCubbin and Patterson, 1983). In the double ABCX model, McCubbin and Patterson (1983) emphasise the importance of fit and balance in the adaptation to achieve a level of functioning that promotes the development of both the family unit and individual members. Families strive to achieve fit between their challenges and resources, between individual and system priorities, and between different dimensions of family life (Walsh, 1996).

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Figure 2-8. ABCX theory (R. Hill, 1949).

2.9.2 Family resilience theory

The concept of family resilience builds on social science theory and research on stress, coping, and adaptation (Walsh, 1996). The cognitive appraisal model of stress and coping, developed by Lazarus and Folkman (1984) and Lazarus (1991), is a multi-level, multi-process model for adaptation. In this model, stress is treated “*as a transactional concept describing adaptive behaviors between persons and their environments, involving appraisals of demands and opportunities. Interventions are aimed at reducing levels of stress, and they seek the best adaptation for a particular individual in a particular environment*” (Walsh, 1996, p.266). Family resilience theory proposes that demands (stressors, strains, daily hassles) and capabilities (resources, coping behaviors) interact with meanings (situational, family identity, world view) to lead to family adjustment or family adaptation (Patterson, 2002). Grzywacz and Bass (2003) draw on family resilience theory in forming their conceptual model of work-life fit, which is outlined in Section 2.10.

Hill (2005) applied both ABCX and family resilience theory in his conceptual model, which is outlined in Figure 2-9. In the model, work, family, and individual characteristics are categorised as either (A) stressors or (B) resources and support. ‘Stressors’ correspond to A in the ABCX model in family stress theory, or ‘demands’ in family resilience theory. Job hours, job pressure, child care hours, household chore hours and pre-schooler at home were identified as stressors/demands (A). Flexible work policies, supportive organizational culture, supervisor support, work group support, working from home, free time, married and stay-at-home-spouse correspond to resources and support/capabilities (B). In the conceptual model, work-family conflict and facilitation correspond to “C” in the ABCX model, or meanings in family resilience theory. Work-to-family conflict, work-to-family facilitation, family-to-work conflict and family-to-work facilitation are included in this category as they constitute meanings given to the stressors, resources, and support. According to Hill, (2005, p.797)

"*theoretically, interaction of these three (A, B and C] leads to X in the ABCX model, or positive outcomes (bonadaptation) and negative outcomes (vulnerability) in family resilience theory*". Job satisfaction and organizational commitment are identified as work outcomes, family satisfaction and marital satisfaction are identified as family outcomes, and life satisfaction and individual stress are identified as individual outcomes. Hill (2005, p.795) contends that *"the outcome of the interplay of A, B, and C may be either positive and facilitative, or stressful and crisis inducing".*

Of interest in Hill's (2005) model is "C" or meanings, which originates from both family resilience and ABCX theories within the model, and taps into the subjective nature of experience. Neisser (1967) contends that "*our experience is never the stimulus directly. It is always a construction based only in part on currently arriving information*" (p.145). Neisser (1967, p.3) further contends that "*the world of experience is produced by the man who experiences it....whatever we know about reality has been mediated not only by the organs of sense but by complex systems which interpret and reinterpret information*". Like Hill (2005), other researchers have recognised the subjective component of the work-life experience. For example, Moen *et al.* (2008) contend that assessment of fit is a subjective cognitive appraisal. Hill's (2005) conceptual model using ABCX and family resilience theory therefore positions 'meaning' as an important aspect which shapes individuals' experience and subsequent perception of demands (A) and capabilities (B).

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Figure 2-9. Hill's conceptual model using ABCX and family resilience theory (Hill, 2005, p.796).

While Hill's (2005) conceptual model does not explicitly refer to work-life fit, it is deeply embedded within a demands and resources framework. It is possible that Hill's (2005) conceptual model could be adapted to accommodate the work-life fit concept which utilises a demands and resources framework. In the adapted model, demands would remain mapped to 'A', resources would remain mapped to 'B', and meaning through subjective cognitive appraisal would be mapped to 'C'. 'X' would focus on individual outcomes as they relate to work-life fit. In the proposed work-life fit conceptual model, the 'meanings' given to experiences of demands and resources are primarily perceptions, which reflect an individual's assessment of the objective demands and resources present in the environment (Voydanoff, 2005). This focus is on perceptions rather than on objective characteristics that may operate outside the individual's awareness because such perceptions generally mediate the effects of more objective characteristics on outcomes (Edwards and Rothbard, 2005, p.216). The proposed model of work-life fit shares some commonalities with Voydanoff's (2007) conceptual model, which is outlined in Section 2.12 of this Chapter.

2.10 Work-life fit drawing on conflict and facilitation

Grzywacz and Bass (2003) draw on family resilience theory in their formation of a work-family fit model. Based on the premise that a family's resources or capabilities allow it to thrive in the face of significant risk, Grzywacz and Bass (2003) conceptualised 'work-family fit' as ''*represent(ing) the extent to which work-family facilitation can eliminate experiences of work-family conflict, or the extent to which work-family facilitation creates an environment that can tolerate experiences of work-family conflict"* (p. 250). In this model, work-family conflict is associated with the risk component of family resilience theory, while work-family facilitation is associated with the resources or capabilities of family resilience theory. As shown in Figure 2-10, work-family fit is positioned as an outcome in this model. In investigating this model, Grzywacz and Bass (2003) indicate that "*results from this study suggest that work-family facilitation contributes to "fit" by eliminating or offsetting the negative potential of work-family conflict*" (p.258).

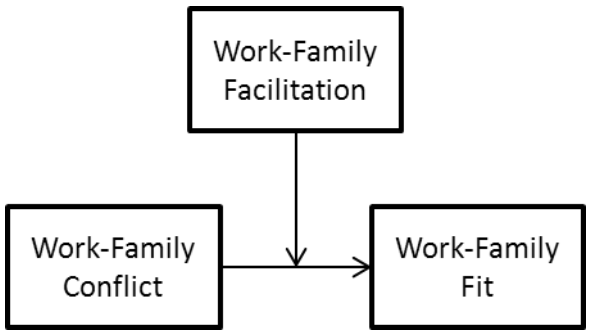

Figure 2-10. Grzywacz and Bass' (2003) conceptualisation of work-family fit.

While Grzywacz and Bass' (2003) research attempts to progress the conceptual model of fit, the use of the conflict and facilitation concepts used are problematic and raise serious limitations with the proposed model. The limitations of both the conflict and facilitation concepts are outlined in further detail below. Contradictory to Grzywacz and Bass' (2003) conceptual model, Clarke, Koch and Hill (2004) found that work-family fit was independent of work-family conflict and family-work conflict. High levels of work-family fit may co-exist with high levels of work-family conflict and family-work conflict. Furthermore, researchers, such as Voydanoff (2005), highlight serious limitations with using conflict and facilitation constructs to measure fit. Voydanoff (2005) argues that the sources and consequences of work-family fit are better understood when specific demands and resources are examined rather than relying on appraisals of conflict and facilitation as representations of fit. When "*measures of conflict and facilitation are used as indicators of fit, the analysis is one step removed from the demands and resources associated with work and family roles (e.g., it is not clear which demands are creating the conflict or which resources are associated with facilitation)"* (Voydanoff, 2005, p.827). Minimal progress of this conceptual model of fit which positions fit

within a conflict / facilitation framework has occurred within the work-life domain beyond the work of Grzywacz and Bass (2003). While this conceptual model of fit has multiple limitations, it served as a critical step in the development of the work-life fit construct. That is, researchers have begun to consider work-life interaction as more than merely just 'conflict' or 'facilitation'. Rather, the interaction of the antecedents ('demands') of conflict and the resources informing facilitation have been investigated using a model which incorporates work-life fit (Teng and Pittman, 1996; Voydanoff, 2005, 2007).

2.10.1 Conflict

In the past twenty-five years, researchers have produced a substantial body of literature on the intersect of work and family lives (Barling and Sorensen, 1997; Greenhaus and Parasuraman, 1999). The work-family literature has been dominated by a conflict perspective (Barnett, 1998; Greenhaus and Parasuraman, 1999). The most commonly cited definition of work-family conflict by Greenhaus and Beutell (1985, p.77) states that work-family conflict is "*a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect*". The interrole conflict perspective is based on Kahn *et al's* (1964) work on role conflict theory and suggests that when one set of role pressures is incompatible with the other set of role pressures, stress and strain will be experienced. The scarcity hypothesis (Goode, 1960) has also been applied to the work-family conflict construct. That is, time spent in one role depletes the time available for another role. According to the scarcity hypothesis, it is assumed that personal resources of time, energy, and attention are finite. According to this view, devoting attention to one role implies that fewer resources can be invested in other roles (Greenhaus and Beutell, 1985). The primary assumption of this theory is that participation in one role tends to have a negative impact on other roles.

Frone, Russell and Cooper (1992) identified that work-family conflict consists of two separate dimensions. Work-to-family conflict, in which work interferes with family, is a separate dimension to that of family-to-work conflict, in which family interferes with work. This is of significance as demands associated with each dimension tend to be domain specific. That is, demands originating in the family domain are related to family-to-work conflict, while demands originating in the work domain are related to work-to-family conflict (Frone *et al.* 1992). While there is agreement that these two distinct dimensions of conflict exist, research has primarily focused on work-to-family conflict and therefore, there is limited understanding of what demands are related to family-to-work conflict.

The work-family conflict concept has been criticised on a number of levels. Firstly, the construct is a "*one-sided negative view of the work-family interface, which may hinder the development of more comprehensive theories of work-family linkages and provide a limited view of the policies and programs that could reduce work-family conflict"* (Voydanoff, 2004, p.399). Recognizing the preoccupation with work-family conflict, researchers have called for a more balanced approach that recognizes the positive effects of combining work and family roles (Barnett, 1998; Frone, 2003; Greenhaus and Parasuraman, 1999; Voydanoff, 2004). Furthermore, given its focus on the incompatibility between work and family demands, the work-family construct views demands as essentially negative. Boyar, Carr, Mosley and Carson (2007, p.102) challenge this view, however, by contending that "*although researchers have assumed that demand is a negative experience, it may be perceived as neutral or even positive by some individuals….To these individuals, work or family demands may be positive in nature and reflect a belief that these roles imply or require these demands*". Secondly, the construct does not consider individual roles outside of the work and family domains, and excludes the community domain altogether. Subsequently, the work-family conflict construct considers only work and family demands, and gives little consideration to how community demands are positioned. Thirdly, the construct gives little consideration to the role resources may play in meeting demands, with some exceptions (for example, Voydanoff, 2004, 2005). And fourthly, while researchers agree that increases in demands are the primary cause of work-family conflict (e.g. Carslon and Kacmar, 2000; Parasuraman, Purohit, Godshalk and Beutell, 1996), demands have been poorly conceptualised in the literature (Boyar *et al*. 2007; Voydanoff, 1988; Yang, Chen, Choi and Zou, 2000). Boyar, Maertz, Mosley and Carr (2008, p.217) contend that "*because work demand and family demand are such critical constructs in the area, clear definitions distinct from overload are absolutely necessary so that they can be adequately measured*". These issues raised regarding demands are examined in Section 2.13 of this Chapter.

2.10.2 Facilitation

There is growing recognition that participation in paid work can impact positively on workers' family life and vice versa. While work-family conflict focuses on the negative impact of work-family interaction and draws on 'demands' as a key concept, work–family facilitation takes a positive approach and draws on 'resources' as central to the construct. However, Wayne, Musica and Fleeson (2004, p. 110) contend that, "*unlike conflict, there is no single established definition of facilitation, (or) set of theoretical processes by which it is expected to occur*". Grzywacz, Carlson, Kacmar and Wayne (2007, p.559) refer to work-family facilitation as "*the extent to which an individual's engagement in one social system such as work or family contributes to growth in another social system*". Grzywacz *et al's* (2007)

conceptualization of work-family facilitation draws on systems theory and complex systems theory (Broderick, 1993; Katz and Kahn, 1978) to explain the interaction between domains. In contrast, other researchers have used 'facilitation' to describe "*positive individual changes in one domain as a function of participation in another"* (Grzywacz *et al.* 2007, p.559) (for example, Aryee, Srinivas and Tan, 2005; Frone, 2003; Grzywacz and Bass, 2003; Hill, 2005; Innstrand, Langballe, Espnes, Aasland and Falkum, 2010; Voydanoff, 2005; Wayne, Musisca, and Fleeson, 2004). These researchers have drawn on the expansion hypothesis to frame the facilitation construct, for example, Barnett and Hyde (2001) draw on expansion theory and contend that active engagement in one domain provides access to resources and experiences that contribute to individual fulfilment. Expansion theory considers human energy to be abundant and expandable and that participation in one role can also have positive effects on other role performances (Marks, 1977).

Along with no single, established definition or theoretical framework, a further criticism of the work-family facilitation construct is that it has been discussed in the literature under various conceptual labels such as enrichment, integration, and positive spillover (Barnett and Baruch, 1985; Friedman and Greenhaus, 2000). Carlson, Kacmar, Wayne and Grzywacz (2006, p.133), argue, that "*many construct labels have been used interchangeably (e.g., Frone, 2003) to describe the positive connections between work and family including positive spillover (Crouter, 1984), facilitation (Grzywacz, 2002), enhancement (Sieber, 1974) and enrichment (Greenhaus and Powell, in press), (but) these constructs are distinct".* Carlson *et al*. (2006, p.133) suggest that facilitation differs from the enrichment construct in that "*enrichment focuses on improvement in individual role performance or quality of life whereas facilitation focuses on improvements in system functioning*". Furthermore, work-family facilitation has been found to have two distinct dimensions, work-to-family facilitation and family-to-work facilitation (Frone, 2003; Grzywacz and Butler, 2005; Grzywacz and Marks, 2000). Although it has been recognized that both dimensions of facilitation are likely to be influenced by differing resources (Frone, 2003; Grzywacz and Butler, 2005; Grzywacz and Marks, 2000), there has been minimal progress in investigating these distinctions. Together with this, the work-family facilitation construct has largely ignored other domains such as community, and therefore the intersect between work/family/community has not been investigated within this framework.

2.11 Fit within an ecology of life course framework

Moen, Kelly and Huang (2008) proposed an 'ecology of life course' approach of work-family fit which suggests that demands and resources at work and home will vary over time, according to different career and family stages. In this framework, fit is positioned as a

mediator, as shown in Figure 2-11. The life course approach suggests that a shift in objective demands/resources at work and at home over the life course result in workers experiencing cycles of control, that is, corresponding shifts in their cognitive assessments of fit. This model further posits that there will be different configurations of fit within a workforce. Moen *et al.* (2008) found that particular types of employees were more likely to share similar assessments of fit. For example, in an empirical case example utilising a white collar sample, Moen *et al.* (2008) found six profiles of fit identified by family circumstances and stage as well as by occupational characteristics and age, ranging from low fit through to optimal fit. For example, respondents rated as 'low fit, high work-family conflict' reported high levels of work-family conflict, and low levels of work schedule fit adequacy and time adequacy. Respondents rated as having 'optimal fit, high resource adequacy' reported high time adequacy, high income adequacy, high positive spillover and good work-schedule fit, while simultaneously scoring low on work-family conflict and negative work-family spillover. The distribution across the fit profiles did not differ by gender, but did differ according to parental status. Most of the respondents in the 'optimal fit' profile did not have children, while those in the 'low fit, high family-work conflict' profile did.

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Figure 2-11. Fit within an ecology of life course framework (Moen *et al.* 2008, p. 414).

In the empirical case example, Moen *et al.* (2008) chose a particular set of demands and resources by which to measure fit, such as time adequacy and income adequacy as likely predictors of fit. Moen *et al.* (2008) contend however, that other predictors could be considered or left out of the fit constellation given that assessment of fit is a subjective cognitive appraisal. According to Lazarus and Folkman (1984), cognitive appraisal is the process of decoding whether an experience is positive, stressful, or irrelevant in regard to well-being. Within Moen *et al's* (2008) model, a stressful appraisal occurs when an individual perceives that the demands of the environment exceed their resources, thereby impacting well-being.

Moen et *al's* (2008) conceptual framework is limited in two important ways. Firstly, like Grzywacz and Bass (2003), the model uses a number of constructs to represent fit such as work-family conflict and work-family facilitation as representing possible demands and resources. By utilising this measure of fit, it is not clear what actual demands and resources constitute fit (Voydanoff, 2007). Secondly, given that Moen *et al*. (2008) contend that fit is a subjective cognitive appraisal, this model of fit doesn't adequately capture the wide range of demands and resources which may constitute fit for a diverse group of workers. For example, the conceptual model does not recognise community demands and resources as

informing fit. While the conceptual model has some limitations however, it also identifies three important aspects. Firstly, workers' experience of fit is essentially a subjective experience which is derived from a cognitive appraisal of the situation and circumstances. Secondly, the model contends that particular types of workers are more likely to share a similar profile of fit even though fit is a subjective cognitive appraisal. For example, the research suggested that workers with children share a similar profile, as do workers without children. Thirdly, the model is based on the notion of life course, contending that workers' fit profiles will change according to life stage and hence position it in a dynamic rather than static framework.

2.12 Work-life fit within a demands and resources framework

Voydanoff (2005, 2007, 2009) sought to extend the work and family person-environment fit (P-E fit) paradigm as outlined by Edwards and Rothbard (1999, 2005). Voydanoff''s (2005, 2007, 2009) model of fit also draws on ecological systems theory, consistent with other work-family fit researchers (eg. Moen *et al*. 2008; Teng and Pittman, 1996), as well as boundary theory. Boundary theory suggests that when the boundaries between the work and family microsystems are sufficiently permeable and flexible, processes occur through which aspects of the work and family domains influence each other (Ashforth, Kreiner and Fugate, 2000). Voydanoff (2007) proposed a cross domain approach to fit whereby work demands are compared with family resources, and family demands are compared with work resources. This approach is framed by two types of fit: work demands–family resources fit and family demands–work resources fit. Fit occurs when work (family) resources meet, offset, or satisfy family (work) demands. As shown in Figure 2-12, the model suggests two types of demands and resources that are associated with work-family fit: within-domain work and family demands and resources and boundary-spanning demands and resources. Further explanation of demand and resource types is outlined in a later section of this Chapter. In Voydanoff's (2005, 2007, 2009) model, the two dimensions of fit range from fit in which demands and resources are equivalent, to misfit in which there is a discrepancy between demands and resources. The two dimensions of fit result in the overall assessment of work-family balance, either directly or through the use of boundary-spanning strategies. Voydanoff (2007, p.128-129) defines work-family fit as a "*form of interrole congruence in which the resources associated with one role are sufficient to meet the demands of another role such that participation in the second role can be effective*". In this conceptual model, fit mediates the relationships between demands/resources and balance.

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Figure 2-12. Voydanoff's (2007, p.126) conceptual model of work-family fit and balance.

In further explanation of this model, work-family balance is considered as a global assessment that work and family resources are sufficient to meet work and family demands such that participation is effective in both domains. It combines the appraisals that family resources are adequate to meet work demands, and that work resources meet family demands with the effects of boundary-spanning strategies to yield an overall appraisal of the extent of harmony, equilibrium, and integration of work and family life. It ranges from high levels of balance to high levels of imbalance. The final stage of the model proposes that work-family balance is related to work and family role performance and quality. However, Voydanoff's (2005, 2007) conceptualisation of fit has yet to be empirically investigated.

Voydanoff (2005, 2007) contends that work, family and community demands and resources interact upon an individual's well-being. Based on this assertion, Voydanoff (2007) identified a range of work, family and community demands and resources which may impact upon fit. However, one major limitation of this model is that community demands and resources are not included. Voydanoff (2007) chose to exclude community demands and resources from the conceptual model of work-life fit "*because of a lack of information about their role*" (p.125). Given that community demands and resources may form part of a person's work-life fit configuration, it is argued that community demands and resources should be included in the resources-demands configuration of fit, as was indicated by DeBord *et al.* (2000) and Brennan *et al*. (2007).

While there are some limitations, such as the exclusion of community, Voydanoff's (2007) conceptual model of fit provides a sound base for progressing the work-life fit framework for four important reasons. Firstly, the model does not draw on the conflict and facilitation constructs to measure fit but takes a more direct approach by assessing demands and resources as they relate to fit. Secondly, the conceptual model positions the work-family fit construct within a systems approach and views it as a dynamic state which changes continually. Thirdly, by including community into the work- family mix, it would be expected that the model could be applied to a wide range of workers, irrespective of occupation or family structure. Finally, this conceptual model would appear to have the capacity to identify specific configurations of fit within workgroup cohorts by identifying the specific demands and resources accessed by workers belonging to these groups.

Pocock *et al.* (2012) draw on Voydanoff's (2007) conceptual model of fit which positions work, family and community domains within a macrosystem. Macrosystems consist of

patterns of social interaction, shared belief systems, and life styles which form a societal blueprint (Voydanoff, 2007, p. 13). Pocock *et al*. (2012) contend that Voydanoff's (2007) model identifies three intersecting spheres of work, family and community in a larger macrosystem. The model "*encourages study of the 'microsystem' of each domain and the demands and resources within it, as well as the four 'mesosystems' of interaction between the three core domains and the demands and resources they create*" (Pocock *et al*. 2012, p.398). Pocock's *et al*. (2012) model is outlined in Figure 2-13. Pocock *et al*. (2012) also contend that the model makes the analysis of demands and resources in each part of the model analytically important. The next sections of the Chapter outline demand and resource concepts in more detail, and determine how they are positioned within the work-life domain.

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Figure 2-13. An ecological systems model of work, family and community (Pocock *et al.* 2012, p.398).

2.13 Demands

2.13.1 Definition

Within the work-life literature, the 'demands' concept is central to a number of constructs such as work-family conflict and work-life fit, as outlined in previous sections. However, definitions of 'demands' lack consistency, and some have been ambiguous or too narrow. Definitions often reflect role overload, which is based on having a negative response to work pressures (Boyar *et al.* 2008), do not consider demands arising from other domains such as family or community, and assume that demands are exclusively negative experiences (Boyar *et al*. 2007). For example, Yang, Chen, Choi and Zou (2000, p.114) define work demands in the context of work-family conflict as "*pressures arising from excessive workloads and typical workplace time pressures such as rush jobs and deadlines*". While researchers such as Yang *et al.* (2000) seek to define the demand concept within their area of study, many researchers refer to 'demands' but do not offer a definition, but instead outline types of 'demands' such as hours worked. Furthermore, within the work-life literature, the work role is often treated as a 'required' and negative demand, whereas the family role (though family is a required demand) is often considered to be the 'preferred' context in which people want to focus their energy (Grawitch, Barber and Justice, 2010).

Some researchers have acknowledged the breadth of 'demands' and have developed definitions which cover the various facets of demands. For example, Voydanoff (2004, p.398) contends that demands in the context of work-family conflict and work-family facilitation are "*structural or psychological claims associated with role requirements, expectations, and norms to which individuals must respond or adapt by exerting physical or mental effort*".

Edwards and Rothbard (1999, p.88) position demands within a person-environment fit construct. Within this framework, demands are defined as "*qualitative and quantitative requirements faced by the person and include objective demands (e.g., commute time, length of workweek) and socially constructed norms and role expectations*". Bakker, Demerouti and Euwema (2005, p.170) refer to work demands as "*physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs*". While Bakker *et al.* (2005) focus their attention on work demands, this definition is transferrable to other domains such as family and community. Poelmans, Spector, Cooper, Allen, O'Driscoll and Sanchez's (2003) definition of demands is similar to other definitions used by researchers (eg, Bakker *et al.* 2005; Edwards and Rothbard, 1999; Voydanoff, 2004) as it identifies the multiple components of demands. Poelmans *et al.* (2003, p.277) contend that "*demands can require the expenditure of time and exertion of effort, but they can also require that the individual experiences some condition or situation that does not in itself require time expenditure or effort, but represents a 'psychological' demand*". Poelmans *et al.* (2003, p.277) suggest that being exposed to "*critical and nasty comments by a supervisor*" may not require an actual effort or response, but the pressure the worker perceives may function as an emotional demand.

While a consistent definition of 'demands' remains lacking within the work-life area of research, the expanded definition of 'demand' offered by some researchers is significant in three important aspects. Firstly, the definition positions demands as occurring both on a quantitative and qualitative basis. This is of note, as demands commonly outlined in the literature are quantitative based, such as number of hours of work and number of dependent children. Secondly, unlike some definitions, the extended definition is not domain-specific. Instead, it can be extended to the work, family and community domains. Thirdly, the definition recognises that individuals may perceive demands differently, and this is consistent with the subjective cognitive appraisal framework to which Moen *et al*. (2008), McCubbin and Patterson (1983), and Hill (2005) referred.

2.13.2 Demand categories

Researchers have sought to identify types of demands that are experienced by individuals in the work, family and community domains, however limited progress has occurred. Peeters, Montgomery, Bakker and Schaufeli (2005) found empirical support for a three-factor structure of job demands and home demands, characterised by quantitative, emotional and mental demands. Quantitative demands refer to work overload, work pressure or too much to do in too little time. Emotional job demands refers to the affective component of the job

and the degree to which the worker experiences emotionally stressful situations. Mental job demands refer to the degree to which an employee expends sustained mental effort in carrying out their work role. Findings of the empirical study, however, did not provide specific examples of quantitative, emotional and mental demands. In Voydanoff's (2007) conceptual model, it is proposed that demands (and resources) interact to shape an individual's experience of work-life fit. Within this model, both demands (and resources) fall into two categories: boundary-spanning or within-domain.

2.13.2.1 Boundary spanning demands

Boundary-spanning demands and resources address the interface between the work, family and community domains. According to Voydanoff (2007) boundary spanning demands and resources differ from within-domain demands and resources in two ways. Firstly, although both within-domain and boundary-spanning demands and resources may originate in either the work, family or community domain, they act as demands and resources in more than one domain. For example, when individuals work from home they are operating in two domains at the same time. Secondly, boundary-spanning demands and resources influence outcomes through a different process as compared with within-domain demands and resources. Voydanoff (2007, 2009) draws on work-family border theory (Clarke, 2000) as a framework for understanding the process through which boundary-spanning demands and resources influence outcomes. Work-family border theory views relationships between domains as a continuum ranging from segmentation to integration. Further detail on work-family border theory is outlined in Section 2.15 of this Chapter.

2.13.2.2 Within-domain

Within-domain demands and resources refer to the characteristics in one domain, which can be either time-based or strain based. According to Voydanoff (2007, p.43), time-based demands "*reflect the idea that time is a fixed resource, that is, that time spent in activities in one domain is not available for activities in another domain*". Given that time is a fixed resource, time-based demands are related to resource drain in which the time or involvement required for participation in one domain limits the time or involvement in another domain. In the work domain, time-based demands include the amount of time in paid work. In the family domain, time-based demands include time caring for children, time caring for elderly relatives, and time is house work. In the community domain, time-based demands include the time spent in volunteering (Voydanoff, 2007).

The second type of within-domain demands is strain-based. Voydanoff (2007) refers to strain-based demands as influencing work, family and community role performance and

quality, individual well-being, and work-family conflict through a process of negative psychological spillover in which "*the strain associated with participating in one domain is carried over to another domain such that it creates strain in the second domain"* (Voydanoff, 2007, p.43). This strain impedes role performance and quality, thereby reducing well-being. Strain-based demands originating in the work domain include job insecurity, and work overload arising from time pressure to complete a task (Söderlund, 2010). In the family domain strain based demands may include relationship conflict and unfairness in house hold work.

2.13.3 Categorisation of demands

Voydanoff (2007) and Pocock *et al*. (2012) categorise demands (and resources) according to work, family and community domains. Voydanoff (2007) and Pocock *et al.* (2012) draw on slightly different definitions of work, family and community domains to categorise demands (and resources). A brief outline of definitions is outlined below.

Work

Both Voydanoff (2007) and Pocock *et al*. (2012) share a similar definition of work. Voydanoff, 2007, p.5) views the work domain as "*the realm of paid work*", while Pocock *et al*. (2012, p.397) define work as including "*activities undertaken in paid employment or through self-employment*".

Family

Voydanoff (2007) identifies two definitions of family. The first definition is based on membership, whereby a family "*consists of persons who are related by biological, marital or adoptive ties. In some cases the definition focuses on persons sharing a household, whereas others include persons not living in the household, such as extended kin and nonresidential children*" (p.6). The second definition is similar to Pocock *et al's* (2012), in that Voydanoff (2007) views families as "*those who share relationships based on affection, obligation, dependence, and cooperation. Thus, a family can be viewed in terms of its membership or as an emotional unit based on love and affection whose members provide care for one another*" (p.6). Similarly, Pocock *et al.* (2012) adopts a relational definition of family, defined as "*a group who pool social life, money and time to sustain their everyday life*" (p.397). This definition suggests that members of a 'family' are not necessarily related biologically, but that families form and exist based on relationships.

Community

Voydanoff (2007) identifies two definitions of community. The first definition focuses on community "*as a group of people living in a common territory who share a history, values, activities, and sense of solidarity*" (p.7). The second definition is relational and "*emphasizes social relationships independent of territory that are characterized by consensus, shared norms, common goals, and sense of identity, belonging, and trust*" (p.7). Pocock *et al.* (2012) also define community based on relationships similar to Voydanoff's second definition of community. Pocock *et al*. (2012) define community as "*the relationships of support and/or interaction between people beyond the household or workplace, which may be based on place, shared interest or identity. Such communities are often geographically based, may be of different strengths and may not be always positive in effect*" (p.397).

While Voydanoff (2007) and Pocock *et al*. (2012) draw on differing conceptual frameworks to position demands and resources within their respective conceptual models, they share similar definitions of work, family and community domains. This is important in progressing the identification of demands and resources in the various domains which are related to work-life interaction.

2.13.4 Positive or negative

As briefly discussed in Section 2.10.1, demands are generally referred to as negative source for the individual within the work-life domain. Boyar *et al.* (2007), however, raises a critical point regarding demands. Boyar *et al.* (2007, p.102) contend that "*although researchers have assumed that demand is a negative experience, it may be perceived as neutral or even positive by some individuals*". While demands are not necessarily negative, they may be a source of pressure when meeting those demands requires high effort and, therefore, are associated with high costs. For example, within the work domain some workers choose to work overtime in order to maximise income generated from work (Tucker and Rutherford, 2005). In the family domain, caring for children would generally be considered a positive time-based demand, while house chores may be considered a negative time-based demand. However, experiences of demands will differ according to individual's preferences, and this can be framed within a cognitive appraisal approach which contends that the individual decodes whether an experience is positive, stressful, or irrelevant (Lazarus and Folkman, 1984). It is also expected that 'role importance' will play a role in an individual's cognitive appraisal of demands. For example, if an individual perceives work as their most important role then the demands they experience which originate from work may or may not be perceived as negative. In contrast, an individual who perceives family as their most important

role may be more likely to appraise demands originating form work as negative. The 'role importance' construct is outlined in Section 2.16 of this Chapter.

2.14 Resources

2.14.1 Definition

Within the work-life domain, the term 'resources' is commonly associated with the work-family facilitation and work-family fit constructs. The term 'resources' however, has been poorly conceptualized within the work-life domain and lacks a common definition from which to progress and extend theory. Some researchers refer to resources but do not explicitly provide a definition (for example, Pitt-Catsouphes, Matz-Costa and MacDermid, 2007). Some studies refer to interventions, strategies and initiatives which are types of resources, however they are not explicitly referred to as 'resources'. Some researchers describe resources in a broad context. For example, Huhtala and Parzfall (2007) identify job resources as either physical, psychological, social and organizational that aid workers to carry out their work. Poelmans *et al.* (2003, p.277) refer to resources as "*both internal/psychological and external/situational to the individual. An internal resource might be an internal locus of control that drives a person to cope with a work or family stressor, whereas an external resource could be a grandparent willing to baby-sit during the day".* Greenhaus and Powell (2006) frame resources within a positive work-family spillover construct, defined as "*an asset that may be drawn on when needed to solve a problem or cope with a challenging situation*" (p.80). Dolcos and Daley (2009, p. 294) outline a comprehensive definition of work resources, as "*physical, psychological, social, or organizational aspects of the job that: (a) reduce job demands and the associated physiological and psychological costs; (b) are functional in achieving work goals; and (c) stimulate personal growth, learning, and development (Schaufeli and Bakker, 2004). Hence, resources are not only necessary to deal with work demands and to "get things done," but they are also important in their own right (Hobfoll, 2002)".* While Dolcos and Daley (2009) focus their attention on work resources, this definition is transferrable to other domains, such as family and communities, and provides a sound basis for identifying a wide range of resources across domains. Furthermore, the definition explicitly states that resources are a means of meeting demands, which is relevant to the work-lift fit construct embedded within a demands-resources framework.

2.14.2 Resource categories

Researchers have sought to identify types of resources that are experienced by individuals in the work, family and community domains. As outlined in the previous section, Voydanoff (2005) identified within-domain and boundary-spanning demands and resources, and

categorised these according to domain. Greenhaus and Powell (2006, p.80) identified five types of resources that can be generated in either the family role or work role. Community role was excluded from the conceptual description, however it is considered relevant within a work-life fit perspective and therefore is a limitation of Greenhaus and Powell's (2006) conceptual framework. The five types of resources are: (1) skills and perspectives, (2) psychological and physical resources, (3) social-capital resources, (4) flexibility and (5) material resources. The first resource type, skills and perspectives, has two components. Skills refer to a broad set of task-related cognitive and interpersonal skills, coping skills, multitasking skills, and knowledge and wisdom derived from role experiences. Perspectives involve ways of perceiving or handling situations. The second resource type, psychological and physical resources, includes positive self-evaluations and self-esteem. The third type of resource, social-capital, has two components, influence and information. This resource type is derived from interpersonal relationships in work and family roles that may assist individuals in achieving their goals. The fourth type of resource, flexibility, refers to discretion to determine the timing, pace, and location at which role requirements are met. The fifth resource, material resources, include money and gifts obtained from work and family roles. Greenhaus and Powell (2006, p.80) contend that "*many of the resources generated by role experiences are interdependent*". As a result of these interdependencies, the acquisition of one resource can trigger the acquisition of other.

Adaptive strategies have been identified as a technique which workers utilise to help meet their demands. Moen and Wethington (1992) define family adaptive strategies as "*the actions families devise for coping with, if not overcoming, the challenges of living and for achieving their goals in the face of structural barriers*" (p. 234). According to Voydanoff (2002), studies of work-family adaptive strategies focus on three types: (1) making changes in work or family roles, (2) obtaining support from spouses, and (3) using family-oriented employment policies and programs. Haddock, Ziemba, Zimmerman and Current (2001) identified ten family adaptive strategies including valuing family, striving for partnership, deriving meaning from work, maintaining work boundaries, focusing and producing at work, taking pride in dual earning, prioritizing family fun, living simply, making decisions proactively, and valuing time. Other researchers have also investigated family adaptive strategies in the context and work, family and community (for example, Pitt-Catsouphes, *et al*. 2007; Sweet, Swisher and Moen, 2005) however there appears to be a definitional limitation of what constitutes a 'resource' and what constitutes a 'family adaptive strategy'. The differential between the two concepts is not well defined in the literature.

Within the work-life domain, researchers have drawn on Hobfoll's, (1989, 1998, 2001) conservation of resources (COR) theory (for example, Halbesleben, Harvey and Bolino,

2009; Innstrand, Langballe, Espnes, Aasland and Falkum, 2010; Lingard *et al,* 2010c; Wayne, Grzywacz, Carlson and Kacmar, 2007). The COR theory is framed within a stress perspective, and is based on the premise that "*individuals strive to obtain, retain, protect, and foster those things that they value, or serves as a means of obtaining things they value, named 'resources'…Stress occurs when these resources are (1) threatened, (2) lost, or (3) when individuals invest resources and do not reap the anticipated level of return*" (Innstrand, Langballe, Espnes, Falkum and Aasland, 2008, p.8). Hobfoll (2001) identified 74 work and non-work resources. Examples of work-related resources are time for work, stable employment, and support from co-workers. Non-work resources include: good marriage, free time, or time with loved ones. Hobfoll (1998) outlines three methods in which to categorise resources. Firstly, resources can be categorised according to internal and external types. Internal resources include "*those that are possessed by self or are within the domain of self. They include self esteem and job skills*" (Hobfoll, 1998, p.57). External resources are "*those resources that are not possessed by the self, but are external to it. Principal among these are social support, employment, and economic status*" (Hobfoll, 1998, p.57). Secondly, resources can be categorised by "*structural resource classification*" (Hobfoll, 1998, p.58). According to this categorisation mode, resources fall into one of four groups: objects, conditions, personal characteristics, and energy resources. The third category by which to group resources is 'centrality of resources to survival' which include primary, secondary and tertiary. Primary refer to those resources that are directly related to survival such as adequate food, shelter and clothing. Secondary refer to those resources which contribute indirectly to primary resources such as social support and hope. Tertiary refer to those resources which are symbolically related to primary or secondary resources such as money and resources that signify social status (Hobfoll, 1998, p.60). Within a work-life fit framework, it is not clear how the resources which form part of the COR theory apply to fit, however they provide a framework from which to explore resources which may be relevant to workers' work-life fit.

2.15 Segmentation and integration

As previously outlined, Voydanoff (2007, 2009) draws on border theory (Campbell Clark, 2000) as a framework for understanding the process through which boundary-spanning demands and resources influence outcomes. Work-family border theory explains how "*individuals manage and negotiate the work and family spheres and the borders between them in order to attain balance. Central to this theory is the idea that 'work' and 'family' constitute different domains or spheres which influence each other"* (Campbell Clark, 2000, p. 750-751). Work-family border theory views relationships between domains as a continuum ranging from segmentation to integration. Segmentation is referred to as "*the degree to which work and family are separated or insulated from one another"* (Edwards and Rothbard,

1999, p. 95). Segmentation results from active efforts of the person to maintain the boundary between work and family. Conversely, integrators prefer to integrate elements of work and family, by removing boundaries between domains and blending facets of each (Kreiner, 2006, p.456). Kreiner (2006, p.486) refers to a person's desire to separate work and home domains as "*preferences for work-home segmentation*". Previous research has indicated that individuals differ in their preference for segmenting or integrating aspects of their lives such as work and home (Ashforth *et al.* 2000; Edwards and Rothbard, 1999; Kreiner, 2006; Kreiner, Hollensbe and Sheep, 2009; Nippert-Eng, 1996).

It has been proposed that individual's segmentation preferences will impact upon their preference for and use of resources. For example, individuals with segmentation needs may call on flexime (Rothbard, Phillips and Dumas, 2005) as it allows them to move between domains whilst maintaining clear boundaries, whereas individuals with integration needs may call on flexplace and onsite childcare (Rothbard, Phillips and Dumas, 2005; Shockley and Allen, 2010). It has been suggested that a wide range of resources should be offered by organizations, so that workers can access resources which match their needs and segmentation preferences (Ryan and Kossek, 2008). Such resources might include dependent care support, family and personal leave, work/life education and training, and options for maximizing time and money resources (Rothbard, Phillips and Dumas, 2005; Shockley and Allen, 2010).

Within the work-life domain, empirical research on integration and segmentation has been limited. Firstly, much of the research to date has been framed within a work-life conflict context (for example, Chen Powell and Greenhaus, 2009; Kreiner, 2006; Michel and Hargis, 2008; Olson-Buchanan and Boswell, 2006) and to a lesser degree work-family balance (for example, Bulger, Matthews and Hoffman, 2007) and person-environment fit (for example, Chen, Powell and Greenhaus, 2009; Kreiner, 2006). Voydanoff (2007, 2009) draws on border theory (Campbell Clarke, 2000) as a framework for understanding the process through which boundary-spanning demands and resources influence outcomes, however this conceptual framework has yet to be tested. Secondly, research on segmentation and integration in the context of resources has been narrowly focused. Much of the research has focused on flextime, flexplace and onsite childcare (for example, Kossek, Lautsch and Eaton, 2006; Rothbard, Phillips and Dumas, 2005; Shockley and Allen, 2010). Thirdly, little is known how resources beyond the work domain are linked to preferences for segmentation and integration, such as community resources and family resources. Fourthly, beyond the conceptual model put forward by Voydanoff (2007), preferences for segmentation and integration have not been explored within a work-life fit context which draws upon a demands-resources framework. Finally, research has focused almost exclusively on the

work domain, in particular which work resources are required to meet work based demands. This limitation is based on the contention that domains are fundamentally linked (Kanter, 1977) and that one domain does not exist independently of the other domains.

While there is support for segmentation and integration and its impact upon work-life experience, there is limited research on individuals' preferences for resources based on segmentation-integration preferences. Within a work-life fit framework, preferences for segmentation and integration would be considered to fundamentally shape the resources which individuals call upon to meet their demands. Furthermore, given that individuals operate within multiple domains, it would be expected that a range of resources from the work, family and community domains would be called on by individuals to meet their demands.

2.16 Role importance

The terms 'role salience', 'work centrality' and 'role importance' have been used interchangeably within the work-life literature, however these terms are used to describe essentially the same construct. Super (1982) used the term 'role salience' to describe the relative importance of a role in an individual's life. Paullay, Alliger and Stone-Romero (1994, p.225) refer to work centrality as "*the beliefs that individuals have regarding the degree of importance that work plays in their lives*". Similarly, Carr, Boyar and Gregory (2008, p.247) refer to work-family centrality as "*a value judgment regarding the relative importance of work or family to an individual's life*". An individual's identification with a role involves a psychological focus on that role's activities which may play a significant part in how effective the individual is in that role, which may in turn influence their physical or psychological availability in another role (Rothbard, 2001). Bagger, Li and Gutek (2008) contend that while adults have multiple role identities, the salience of the identities is not the same for each role and that these roles are placed in a hierarchy. It has also been suggested that "*the more important a role is to an individual, the more time and energy he or she will invest in it, allowing less time and energy for other roles*" (Cinamon, 2010, p.85). Work and family roles are the most salient and significant identities for working adults (Lobel and St. Clair, 1992; Werbel and Walter, 2002). Bagger *et al*. (2008) raise a critical point in terms of the role salience construct. Role salience "*reflects the subjective importance of each identity and the varying levels of resources one is willing to commit to these identities*" (Bagger *et al*. 2008, p.189). In this context therefore, it is proposed that salience attributed to a role has a direct impact upon the resources experienced by individuals in that role.

In the context of Barnett's (1998) model of the work-social system interface, as outlined in Section 2.6, role salience may be considered as a proximal condition which is related to the personal needs, values and aspirations of an individual. Proximal conditions are shown in Figure 2-14. Barnett (1998) suggests that individual's use of work and family strategies may be impacted upon by individual's meaning and importance ascribed to a particular role, and that is consistent with Bagger *et al*. (2008). For example, younger workers with career aspirations may choose to work long hours to progress their career, while working mothers with young children may choose to reduce their hours so that they can meet caring responsibilities.

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Figure 2-14. Proximal conditions of Barnett's (1998, p.165) work-social system interface model.

Role salience, however, has primarily been investigated within the context of work-family conflict, (for example: Bagger, Li and Gutek, 2008; Carlson and Kacmar, 2000; Carr, Boyar and Gregory, 2008; Cinamon, 2010; Cinamon and Rich, 2002) and has been positioned as a moderator between work/family role and outcomes, as shown in Figure 2-15. Research indicates that individuals who value work over family experience greater family interference with work conflict, whereas those who value family experience greater work interference with family conflict (Carlson and Kacmar, 2000; Carr, Boyar and Gregory, 2008; Cinamon, 2010; Cinamon and Rich, 2002). Given the emphasis on work-family conflict, little is known how role salience is related to the work-life fit construct. However these important findings provide a base from which to further investigate the role salience construct and its relationship with work-life fit.

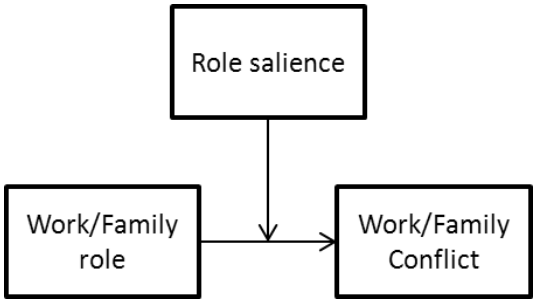

Figure 2-15. Role salience as a moderator between work/family role and work/family conflict.

2.17 Positioning of work-life fit within the current literature

A review of the work-life fit literature reveals that fit is an emerging construct that has been conceptualised using an array of theoretical frameworks and definitions, which are fragmented and which have limited the progress of construct development. Emerging from

the review of literature are some clear themes which provide a base from which to progress the fit construct:

- Positioning work-life fit within a systems framework which recognises the dynamic interaction between microsystems and mesosytems, which in turn operate within a macrosystem;
- Conceptualising work-life fit within a demands-resources framework, whereby the interaction of demand-resource configurations will result in fit or mis-fit;
- Drawing on the cognitive appraisal approach which positions work-life fit as a subjective process of decoding the interaction of demands and resources;
- Sources of fit are better understood when specific demands and resources are examined rather than relying on appraisals of conflict and facilitation as representations of fit; and
- Inclusion of the community domain in the fit construct, such that community demands and resources may impact upon fit or mis-fit.

The work-life fit model has the capacity to be inclusive of all workers irrespective of family structure and occupational grouping, respond to the limitations of work and family by incorporating community, and offers a framework which recognizes that work-life interaction is a dynamic rather than static state. Moreover, the work-lift fit model views the person as whole rather than in parts, and moves the emphasis from work-family experience to work-life experience.

2.18 Summary

This Chapter started by providing an overview of work-life interaction in the Australian construction industry. The definitional constraints evident within the work-life literature were explored, followed by a consideration of the theoretical limitations of the work-life domain. Next, the work-life fit construct was described in conjunction with the theoretical paradigms underpinning the construct, and various conceptual models of fit were outlined. As the work-life fit construct is embedded within a demands-resource framework, an overview of demands and resources was described. The Chapter then outlined the segmentation-integration and role salience paradigms and their relation to work-life fit, and finished by positing where work-life fit is currently positioned within the literature. The next Chapter describes the research approach undertaken.

3 Chapter Three: RESEARCH APPROACH

3.1 Introduction

This Chapter describes and justifies the research approach used to address the research questions, which were identified in Chapter 1. The Chapter starts by considering the philosophical views that influence research design. Following on from this, research approaches are explored. The Chapter then goes on to describe data collection techniques which are available to the researcher. Finally, the Chapter describes and justifies the research design and methodology which is applied to address the research questions.

3.2 Philosophical approach

Crotty (1998, p.17) contends that "*at every point in our research – in our observing, our interpreting, our reporting, and everything else we do as researchers – we inject a host of assumptions. These are assumptions about human knowledge and assumptions about realities encountered in our human world. Such assumptions shape for us the meaning of research questions, the purposiveness of research methodologies, and the interpretability of research findings*". Underlying these assumptions is the philosophical approach applied to research, and Creswell (2009, p.5) states that "*although philosophical ideas remain largely hidden, they still influence the practice of research and need to be identified*". Together, ontology and epistemology inform the philosophical approach of the research and are briefly described in the following section.

3.2.1 Ontology

Ontology is the study of being (Crotty, 1998) and refers to the form and nature of reality (Blaikie, 2007; Oliver, 2010; Punch, 1998; Saunders, Lewis and Thornhill, 2009). Ontology raises issues about what people believe is real and what they believe exists in the world (Frost, 2011; Saunders *et al*. 2009). Oliver (2010) refers to two types of ontology. Realist ontology holds that the subject in mind actually exists as an entity in the world, while nominalist ontology holds that the subject in mind is simply the name of a broad, descriptive term. If researchers adopt a realist ontology, then the assumption is that the social phenomena actually exists in real terms and that the epistemological framework would allow these phenomena to be measurable. Within this philosophical position the researcher would select data collection methods such as questionnaires, which assume it is possible to collect data in a precise and numerical way (Oliver, 2010). In contrast, if nominalist ontology is assumed, then it is also assumed that the phenomena are less precise, and data collection methods utilised may include interviews or focus groups (Oliver, 2010). In its basic form,

ontology can be viewed as taking a position or perspective. For example, by taking a 'management' perspective or 'worker' perspective, an ontological stance may be taken at a work team level or at an individual level. The world view held by these entities varies due to their experience of work. From this perspective, the epistemological stance would influence the application of methodology and methods. Epistemology, methodology and methods are outlined further in this Chapter.

3.2.2 Epistemology

Epistemology refers to the nature of knowledge claims (Blaikie, 2007; Crotty, 1998; Punch, 1998), and asks questions about what knowledge is and how it can be understood (Oliver, 2010). It raises issues about how individuals regard truth, what they believe is real and how they develop their understanding of their world (Frost, 2011). Maynard (1994, p.10) states that "*epistemology is concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both legitimate and possible*". Therefore, epistemology essentially provides a framework which informs the type of data which is collected, how the data is measured, and how the data is analysed. Various epistemological approaches are described in the literature, including objectivism and constructivism. Objectivism contends that meaningful entities exist independently of consciousness and experiences. Truth and meaning reside in the objects, therefore meaningful reality exists apart from any consciousness (Crotty, 1998). According to this approach the objective truth can be discovered because understandings and vales are objectified in the people being studied (Crotty, 1998; Saunders *et al*. 2009). In contrast, constructivism contends that there is no objective truth waiting to be discovered. Truth, or meaning comes into existence in and out of engagement with perceived realities in the world. Meaning is not discovered but constructed. In this understanding of knowledge, different people may construct different meaning in different ways, even in relation to the same phenomenon (Crotty, 1998).

3.2.3 Theoretical perspective

According to Crotty (1998) the theoretical perspective is the philosophical stance informing the methodology, and provides context for the process and grounding its logic and criteria (Crotty, 1998). While Crotty (1998) describes the most common perspectives as positivism, interpretivism, critical inquiry, feminism and post modernism, there appears to be no consensus within the literature about common theoretical perspectives and the way in which perspectives are framed or categorised. For example Saunders *et al.* (2009) describe the three most common perspectives as being positivism, realism and interpretivism; Riege (2003) describes the four main perspectives as positivism, realism, critical theory and

constructivism; and Stiles (2003) describes them as positivism, symbolic interactions, ethnomethodology, realism, idealism and phenomenology. While there appears to be little consensus around what constitutes common theoretical perspectives within the literature, positivism, interpretivism, and critical inquiry appear to be consistently identified, and therefore are briefly outlined below. Creswell and Plano-Clark (2007, p.22), however, contend that researchers "*must not see these categories as rigid classifications but rather organizing frameworks to use in viewing different stances*".

3.2.3.1 Positivism

The positivist position is derived from natural sciences and is characterised by the testing of hypotheses developed from existing theory through the measurement of observable social realities. This position assumes that the social world exists objectively and externally, that knowledge is valid only if it is based on observations of this external reality, and that universal or general laws exist or that theoretical models can be developed that are generalisable, can explain cause and effect relationships, and which lend themselves to predicting outcomes (Saunders *et al*. 2009).

3.2.3.2 Interpretivism

The interpretivist approach looks for culturally derived and historically situated interpretations of the social life-world (Crotty, 1998, p.67). This theoretical perspective regards social reality as the product of processes by which social actors negotiate the meanings for actions and situations. Social reality is these interpretations, becoming networks of socially constructed meanings (Blaikie, 2007).

3.2.3.3 Critical theory

Critical theory perspectives are concerned with "*empowering human beings to transcend the constraints placed on them by race, class or gender*" (Creswell, 2009, p.10). Critical theory researchers are interested in social changes in relation to social struggle, and operate under the assumption that "*knowledge gleaned from their research represents an initial step toward addressing social injustices and promoting social change*" (Onwuegbuzie, Johnson and Coluns, 2009, p.126).

3.3 Research design frameworks

While it is acknowledged that the philosophical approach underpinning research design should be identified (Creswell, Hanson, Plano-Clark and Morales, 2007; Crotty, 1998;

Saunders *et al*. 2009) there appears to be little consensus around language and framework used to perform this function. To illustrate this lack of consensus, Creswell (2009, p.6) uses the term 'worldview', as referring to a basic set of beliefs that guide action, and further acknowledges that various terms are to also used to describe worldview such as 'epistemologies', 'ontologies', 'paradigms' and 'broadly conceived research ideas'. Furthermore, frameworks used to describe research design lack consistency as is shown by the following three frameworks put forward by Crotty (1998), Creswell (2009) and Saunders, Lewis and Thornhill (2009).

3.3.1 Crotty (1998)

Crotty (1998) contends that there are essentially four interconnected elements of research design. These elements are: (i) epistemology; (ii) theoretical perspective; (iii) methodology; and (iv) methods. These four elements are shown in Figure 3-1, below. Within each of these four elements are a range of variants, as shown in Table 3-1. Crotty (1998) acknowledges that the listing is not exhaustive and that there are additional and indeed numerous variants falling within theoretical perspective, methodology and methods. According to Crotty's (1998) framework, the distinction between qualitative and quantitative occurs at the level of methods. This is in contrast to other models which introduce the qualitative and quantitative "divide" at the research methodology level (for example, Creswell, 2009).

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Figure 3-1. Framework for developing research design (Crotty, 1998, p.4).

Table 3-1. Range of elements informing research design (Crotty, 1998).

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3.3.2 Creswell (2009)

In differentiation to Crotty's (1998) framework, Creswell (2009) outlines three major elements of a framework for research design which are made up of: (i) philosophical world views; (ii) selected strategies of inquiry; and (iii) research methods, which is shown in Figure 3-2. Furthermore, research design is defined as either, qualitative, quantitative, or mixed methods. However, Crotty (1998) argues that qualitative and quantitative methods should be regarded at the methods stage of the design rather than at the level of epistemology or theoretical perspective, and contends that "*we should accept that, whatever research we engage in, it is possible for either qualitative methods or quantitative methods, or both, to serve our purposes*" (p.15). As such, while Creswell's (2009) model provides a sound model

from which to design research, Crotty's (1998) model enables a finer grained design which distinguishes between epistemology and theoretical perspective, as well as accommodating for flexibility of qualitative and quantitative strategies at the level of methods.

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Figure 3-2. A framework for research design (Creswell, 2009, p.5).

3.3.3 Saunders, Lewis and Thornhill (2009)

In contrast to the research design framework put forward by Crotty (1998) and Creswell (2009), Saunders *et al.* (2009) put forward an additional variation to the suite of research design frameworks. Saunders *et al.* (2009) refer to this framework as the 'Research Onion', as shown below in Figure 3-3, and outline six stages which incorporate philosophies, approaches, strategies, choices, time horizons, and techniques and procedures. Again, there is a lack of common language used to describe the six key elements of the framework, in contrast to the other frameworks. This framework offers additional components of the research design such as approach (deductive or inductive), and time horizons (cross-sectional or longitudinal).

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Figure 3-3. The Research Onion (Saunders, Lewis and Thornhill, 2009, p.108).

3.4 Research logic

In their 'Research Onion' framework, Saunders *et al.* (2009) refer to research approaches as being either inductive or deductive. Similarly, Gravetter and Fornazo (2009) and Creswell (2009) refer to the two types of reasoning as being induction and deduction. Other researchers, such as Frost (2011) extend these categories and refer to induction, deduction and abduction. Blaikie (2007), however, refers to four research strategies which comprise inductive, deductive, abductive and retroductive strategies. Blaikie (2007, p.8) contends that "*following the choice of a research problem and research questions, the choice of a research strategy, or a combination of them, is the most important decisions that a researcher must make*". The logics of the four research strategies are summarised in Table 3-2.

Table 3-2. The logics of the four research strategies (Blaikie, 2007, p.8).

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Each research strategy has "a *philosophical ancestry and foundation, and includes ontological assumptions about the nature of reality and epistemological assumptions about how that reality can be known*" (Blaikie, 2007, p.10). Research logic, therefore, is intrinsically linked to philosophical approach, and in turn, shapes the methodology and method applied to a research.

3.5 Purpose of research

The purpose of research can be exploratory, descriptive or explanatory (Neuman, 2003; Saunders *et al.* 2009). Exploratory research seeks to clarify and explore a new idea, event or poorly understood phenomenon, or to develop propositions for further enquiry. Exploratory research can be conducted using observation, searching the literature, interviewing experts on the subject, and conducting focus group interviews (Saunders *et al*. 2009). Descriptive research supports the development of precise measurements and reporting characteristics of some population or phenomena (Neuman, 2003). Descriptive research may be an extension of exploratory research (Saunders *et al.* 2009). Explanatory research seeks to establish causal relationships between variables (Saunders *et al.* 2009) and is focused on explanations of phenomena that have been explored and described (Neuman, 2003). Table 3-3 provides more information about the three research purposes. The purpose of the research is essentially linked to the research question under investigation, and essentially shapes the methodology and method applied to the research.

Table 3-3. Purpose of Research (Neuman, 2003).

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3.6 Research problem

Workers of the Australian construction industry experience a high-demands environment, in which long and irregular work hours are considered standard. Excessive demands have been shown to cause harm to workers, their family, and the organization (Allen *et al*. 2000). Access to resources can assist workers to meet the demands they experience, such that role responsibilities can be achieved. However, no work in Australia has fully explored the range of demands experienced by workers in the construction industry, or the resources required to meet these demands. The work-life fit model contends that when demands are met by

resources, individuals will experience effective role performance. Given that experience is self-referent and subjective in nature, it is not known how demands-resource profiles differ between workers, and whether this is impacted by subjectivity and individual characteristics.

3.7 Research questions

The research sought to explore the demands and resources of workers in the Australian construction industry through the application of an innovative methodology, and to develop a work-life fit model which applied a demands and resources framework. Four questions were developed as a basis for the research:

1. **What is the underlying structure of work-life fit?**
    a. What demands and resources are associated with work-life fit in the construction industry?
2. **How do demand-resource profiles differ between workers?**
    a. How does life stage influence the configuration of demand-resource profiles?
    b. How do the demand-resource profiles of white collar (salaried) and blue collar (waged) workers differ?
3. **How do individual attributes influence demand-resource profiles?**
    a. How does role importance influence the configuration of demand-resource profiles?
    b. How does segmentation-integration preference influence the configuration of demand-resource profiles?
4. **To what extent is Q Methodology a suitable methodology with which to explore the work-life experience of workers of the construction industry**?

3.7.1 Research design framework

The current research design is outlined according to Crotty's (1998) framework. This research assumes a nominalist ontology, which applies a constructivist epistemological approach with an interpretivist theoretical perspective. Two methodologies are applied to the research, which include Q Methodology and survey research methodology, and Q sort, survey and interview will form the methods. The research is exploratory and takes an abductive approach. The research design that is utilised is shown in Figure 3-4. The research design elements are outlined in the following section.

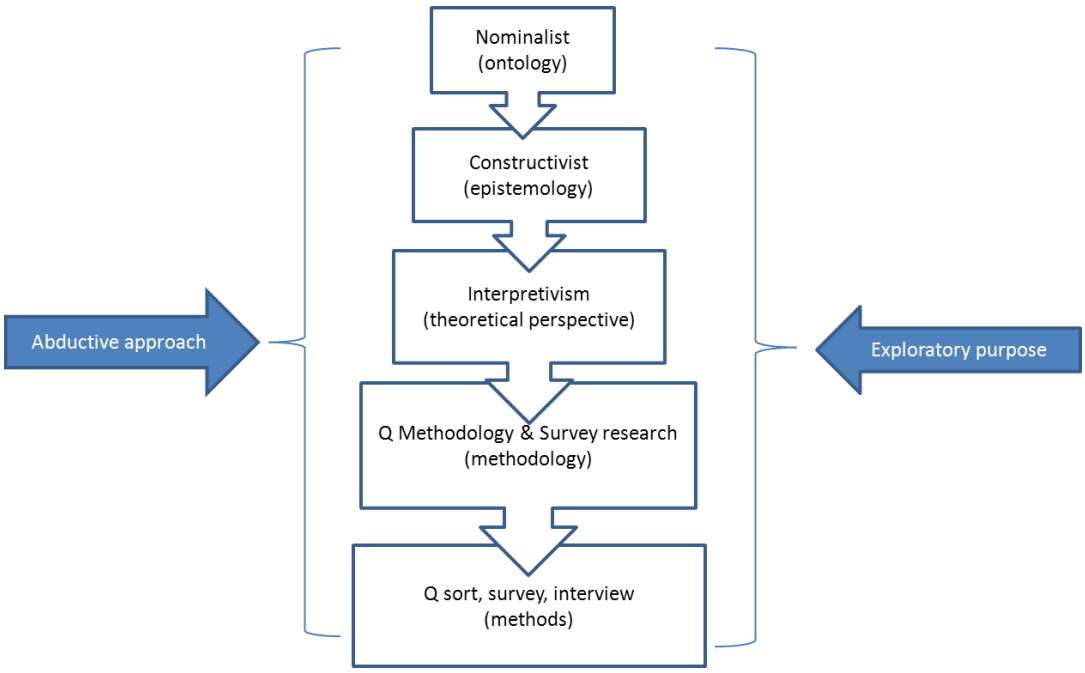

Figure 3-4. Overview of the applied research design.

3.7.2 Epistemology

This research seeks to understand individuals' experience of demands and associated resource requirements within their work, family and community domains. Neisser (1967, p. 3.) contends that "*the world of experience is produced by the man who experiences it",* and this taps into the subjective nature of experience which is central to this research. Experience is largely self-referent and subjective in nature, therefore a constructivist epistemological approach is applied to this research. The constructivist approach contends that there is no objective truth waiting to be discovered (Crotty, 1998). Reality is a consequence of the context in which the action occurs and is shaped by the cultural, historical, political, and social norms that operate within that context and time (Berger and Luckmann, 1966). Within a constructivist framework, reality can be different for individuals based on their unique understanding of the world and their experience of it (Berger and Luckmnan, 1966). Constructivism provides a perspective from which to view the world that allows for unique differences of individuals to come into focus, while at the same time permitting the essential sameness that unites individuals to be identified (Ashworth, 2003). In contrast to constructivism, objectivism views reality as universal, objective and quantifiable (Crotty, 1998). From this perspective, it is argued that reality is the same for every individual and through the application of science, shared reality is identified. By adopting this orientation, the individual is not considered as the perceiver of his or her world, nor as the conceiver or constructor of his or her world (Ashworth, 2003). Constructivism, on the other hand, views the individual as a sense maker in that the individual seeks to understand or make sense of their world as they see and experience it (Darlaston-Jones, 2007).

This research takes an abductive approach. Blaikie (2007, p.89) contends that the abductive approach involves constructing theories that derive from social actors' language, meanings and accounts which is based on a constructivist epistemology. Research begins with describing these activities and meanings and then developing categories than can form the basis of understanding the research issue. Unlike the inductive and deductive research strategies, the abductive approach incorporates the meanings and interpretations of individuals and elevates them to the central place in social theory and research (Blaikie, 2007, p.90).

3.7.3 Theoretical perspective

This research applies an interpretivist theoretical perspective. In contrast to the 'single reality' view of positivism, the interpretivist approach considers that there are multiple views (Denzin and Lincoln, 2003), and that "*it is more likely that people experience physical and social reality in different ways*" (Cavana, Delahaye and Sekaran, 2001, p.9). The focus of the researcher is on understanding the meanings and interpretations of 'social actors' and to understand their world from their point of view (Saunders *et al*. 2009).

3.7.4 Methodology

In Crotty's (1998) framework which outlines the four elements of research design, methodology follows theoretical perspective. Methodology refers to the strategy, plan of action, process or design lying behind the use of particular methods and linking the choice and use of methods to the desired outcomes.

For this research, a methodology is needed that will:

a) enable participants to reveal their experience of demands;
b) systematically examine participants' experience of demands;
c) through examination of demands identify clusters (groups) which represent participants shared experience of demands;
d) enable participants to reveal their resource requirements to meet demands;
e) examine which resources are aligned to each demand cluster;
f) enable the formation of demand-resource profiles which bring together demand clusters and resource requirements;
g) interpret demand-resource profiles in conjunction with demographic characteristics; and
h) examine whether individual characteristics are related to demand-resource profiles.

According to Neuman (2003) and Saunders *et al's* (2009) description of exploratory, explanatory and descriptive studies, this research is defined as exploratory as it seeks to; (i)

become familiar with the basic facts, setting and concerns; (ii) generate new ideas, conjectures or hypotheses; (iii) formulate and focus questions for future research; and (iv) develop techniques for measuring and locating future data.

3.7.5 Mixed methods approach

Two methodologies are utilised in the research, including Q Methodology and survey research. Given that two methodologies are utilised, a mixed methods strategy is essentially applied to address the research questions. Creswell (2009, p.230) refers to mixed methods research "*as an approach that combines or associates both qualitative or quantitative forms of research. It involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in the study*". On the face of it, qualitative and quantitative approaches may be perceived as opposing, given that quantitative research is more concerned with the deductive testing of hypotheses and theories, while qualitative research is more concerned with exploring a topic, and with inductively generating hypotheses and theories (Punch, 1998). Moreover, quantitative approaches are more commonly underpinned by a positivist philosophical framework, whereas qualitative approaches are more commonly underpinned by a constructivist framework. Punch (1998, p.240) contends however, that "*while quantitative research may be most used for testing theory, it can also be used for exploring an area and for generating hypothesis and theory*". In this sense, together with the qualitative component, the quantitative component of the research will be used as an exploratory means from which to generate hypotheses and theory.

Creswell (2009) identifies three categories of mixed method approaches which are sequential, transformative and concurrent. Sequential refers to approaches whereby the researcher seeks to elaborate on or expand on the findings of one method with another method. Transformative refers to approaches whereby the researcher uses a theoretical lens as an overarching perspective within a design that contains both quantitative and qualitative data. Concurrent refers to approaches whereby the researcher "*converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem*" (Creswell, 2009, p.14). In the concurrent approach, both qualitative and quantitative forms of data are collected at the same time, and then integrated in the interpretation of the results. In this approach, one smaller form of data may be embedded with another form of data in order to analyse different types of questions (Creswell, 2009). A concurrent mixed method approach is applied to address the research questions. Figure 3-5 shows an overview of the methodologies applied in the research, and the following sections outline the use of these methodologies in more detail.

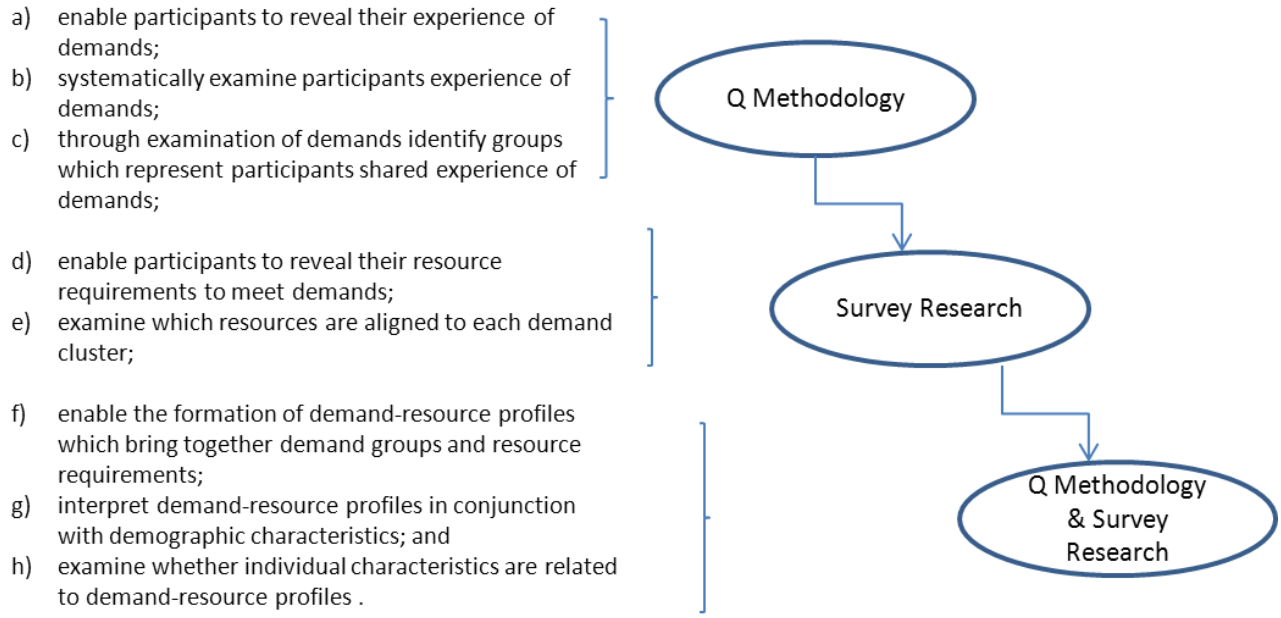

Figure 3-5. Overview of methodologies applied in the research.

Creswell (2009) identifies three types of mixed method concurrent approaches, which are (1) concurrent triangulation strategy, (2) concurrent embedded strategy, and (3) concurrent transformative strategy. This research will apply a concurrent embedded approach. Creswell (2009, p. 214) describes the embedded approach as one that "*has a primary method that guides the project and a secondary database that provides a supporting role in the procedures*". This embedding may mean that the second method is used to address different research questions. The advantages of this method is that the two types of data can be collected simultaneously during a single data collection phase, as well as the capacity of the researcher to "*gain perspectives from the different type of data"* (Creswell, 2009, p.215). Some of the disadvantages identified with this approach is the need to transform data so that it can be integrated within the analysis phase of the research (Creswell, 2009). Within this research, there was no requirement to transform data, therefore this possible limitation was not applicable to this research. Creswell (2009) states that a further disadvantage with the mixed method approach is the interpretation of results due to the two methods having unequal status. This research was designed in such a way that each method was critical in the exploration and interpretation of the research problem. Therefore, the methods did not have unequal status. Rather, they were complimentary, as described in Section 3.7.4.

3.7.6 Triangulation

Triangulation is defined by Denzin (1978, p. 291) as "*the combination of methodologies in the study of the same phenomenon*". Jick (1979, p.603) suggests that triangulation can be used to capture "*a more complete, holistic, and contextual portrayal of the unit(s) under study*". Triangulation may be used not only to examine the same phenomenon from multiple

perspectives but also *"to enrich our understanding by allowing for new or deeper dimensions to emerge"* (Jick, 1979, p. 603-604). Research undertaken from a constructivist approach is "*not in pursuit of a definitive truth about experience…but instead (seeks to) understand individuals to bring a unique perspective to the way they see and comprehend the world around them*" (Frost, 2011, p.7). In this context, different data collection methods may be used "*to bring different ways of understanding the data, and to highlight complementary, contradictory or absent findings within it*" (Frost, 2011, p.8). In this regard, triangulation was used as a complementary method rather than a method in which to highlight flaws in measurements. Triangulation was applied to this research by investigating the demand and resource experiences of participants from a range of different lenses. Responses from the questionnaire were examined together with the demand and resource data obtained through the Q sort and the resource sort. These three instruments are outlined in Chapter 5 (Q instrument), Chapter 6 (resources instrument), and Chapter 7 (questionnaire).

3.7.7 Q Methodology

Q Methodology is one of two methodologies applied in the research. Chapter 4 introduces Q Methodology and its various components. As such, the Q Methodology used in this research will only be briefly outlined here. Q Methodology has been established for over seventy years and has been used by researchers whose epistemological position sits within a constructivist framework rather than a positivist framework. Q Methodology is a methodology which has been developed to study people's point of view or experience, also referred to as subjectivity. Researchers who utilise Q Methodology regard subjectivity as being an individual's point of view or experience, represented through a Q sort, and objectively assessed for commonality of viewpoints or experience through factor analysis (Stephenson, 1953). Q factor analysis determines whether a set of people cluster together rather than a set of variables (Brown, 1980). Within Q Methodology, a factor indicates a shared viewpoint on a given topic, whereby those participants share a common understanding, but differently from participants grouping onto a different factor. Importantly, Q Methodology focuses "*on the range of viewpoints that are favoured (or which are otherwise 'shared') by specific groups of participants"* (Watts and Stenner, 2005, p.71) rather than on focussing on individuals.

Given its philosophical underpinnings, Q Methodology is considered a suitable methodology from which to respond to the research questions as they relate to 'experience'. Specifically, application of Q Methodology will enable the 'experience of demand' groups to emerge from the data, which is a critical step in the subsequent formation of demand-resource profiles. Furthermore, the focus of Q Methodology is exploratory. Watts and Stenner (2005, p.80) contend that "*it is better to avoid too many assumptions a priori…..the whole point of Q*

methodology is to allow individuals to categorize themselves on the basis of the item profiles they produce (and hence via the viewpoints they express). Its function is exploratory".

3.7.8 Survey Research

Together with Q Methodology, survey research was the second methodology that was applied to the research. Survey research is used within social research based on structured or systematic sets of data collected about the same variable from at least two cases (de Vaus, 1995). Surveys are a means by which to obtain self-reported answers about attitudes, opinions, personal characteristics and behaviours (Gravetter and Forzano, 2009). Furthermore, survey research comprises of various forms of data collection. Fink (2002) identifies four types of survey data collection methods including self-administered questionnaires; interviews; structured record reviews to collect financial, medical, or school information; and structured observations. Survey research is commonly applied in a Q study as it assists with interpretation of the findings. Specifically, by combining survey data with Q Methodology, the characteristics associated with each factor can be examined, and it is possible to explore whether certain viewpoints belong exclusively to specific groups (Watts and Stenner, 2005).

In order to examine the relationship between emergent demand clusters (groups) with personal attributes, additional methods must be used in conjunction with the Q sort. It is common practice to combine Q Methodology with survey based data which provides important information to assist with interpretation of findings (for example, Akhtar-Danesh, Baumann and Cordingley, 2008; Gallagher and Porock, 2010; van Exel, de Graaf and Rietveld, 2011; Watts and Stenner, 2005, 2012; Webler, Danielson and Tuler, 2007). In the first instance, survey research was used to examine which resources were aligned to each of the emerging demand clusters. Secondly, by combining the survey data with the Q data, it was possible to interpret demand-resource profiles in conjunction with demographic characteristics. Thirdly, by combining the survey data with the Q data, it was possible to explore whether individual characteristics were related to demand-resource profiles.

3.8 Methods

In Crotty's (1998) framework which outlines the four elements informing research design, methods follows methodology. Methods refer to the techniques or procedures used to gather and analyse data related to the research questions. Similarly, Punch (1998) refers to 'method' as including design, data collection and data analysis. Given that a mixed methodology approach is applied in the research, it follows that the research applies a mixed methods approach. Saunders *et al*. (2009, p.595) refer to 'mixed methods approach' as a

general term for the utilisation of both quantitative and qualitative data collection techniques and analysis procedures that are used in a research design.

Chapter 4 introduces Q Methodology and its various components, including methods. As such the Q methods used in this research will only be briefly outlined here. Chapters, 5, 6 and 7 describe the development and piloting of the instruments used in the research. Chapter 8 outlines the method and procedures administered in the research in great detail. The following section therefore provides a brief overview of the methods used in the research.

3.8.1 Data collection

Three forms of data collection were applied to the research:

a) A Q sort of demands experienced in the work, family and community domains, and a post sort interview. Development and piloting of the Q instrument is described in Chapter 5.
b) A survey of resources required to meet demands and a follow-up interview. Development and piloting of the resources instrument is described in Chapter 6.
c) A self-administered questionnaire which collected demographic characteristics, information on demands and resources, as well as measuring a set of variables related to work-life fit including role salience, segmentation preferences, and role importance. Development and piloting of the questionnaire is described in Chapter 7.

3.8.2 Data analysis

A range of data analysis phases were undertaken:

a) The Q sorts were factor analysed in order to reveal factors, and these factors represented 'commonality' of how participants experienced demands, referred to as 'demand groups'.
b) After the demand groups had been established, the resources associated with each group were identified and frequency analysed.
c) The demand groups and corresponding resources were combined to form demand-resource profiles.
d) Demographic information obtained from the questionnaire was combined with the demand-resource profiles to investigate the characteristics of each profile.
e) Demand and resource information obtained from the questionnaire were combined with the demand-resource profiles and were triangulated to advance interpretation of the results.

f) Role salience and segmentation preference variables obtained from the questionnaire were cross referenced with the demand-resource profiles, to examine whether these personal characteristics impacted upon work-life fit.

3.8.3 Relationship between data collection and analysis

In the preceding sections, a brief description of the data collection and analysis phases were outlined. The relationship between data collected and analysed is outlined in Table 3-4.

Table 3-4. Relationship between data collection and data analysis.

Methodology	**Data collection method**	**Data analysis**	**Output**
Q Methodology	Q sort and post sort interview*	Factor analysis. Interview data aids interpretation of factors	Demand groups
Survey research	Survey of resources required to meet demands and a follow-up interview	For each demand group, frequency analysis of resources	Resource profile associated with each demand group
Q Methodology and survey research		Combine demand groups with associated resources	Demand-resource profiles
Q Methodology and survey research	Demographic information obtained from the questionnaire	For each demand-resource profile, frequency and mean analysis	Demographic composition of each demand-resource profile
Q Methodology and survey research	Role salience, segmentation preferences, and role importance from the questionnaire	For each demand-resource profile, frequency and mean analysis. Analysis of variance.	Role salience, segmentation preferences, and role importance indicators of each demand-resource profile

*While interviews are more commonly categorised as a survey research technique, a post sort interview is an integral part of the data collection phase of Q Methodology.

Moreover, the analysis phase can be represented as three distinct stages and is pictorially illustrated in Figure 3-6. As shown in Figure 3-6, the three stages are interdependent, as the output of stage one is used to inform stage two, and the output of stage two is used to inform stage three.

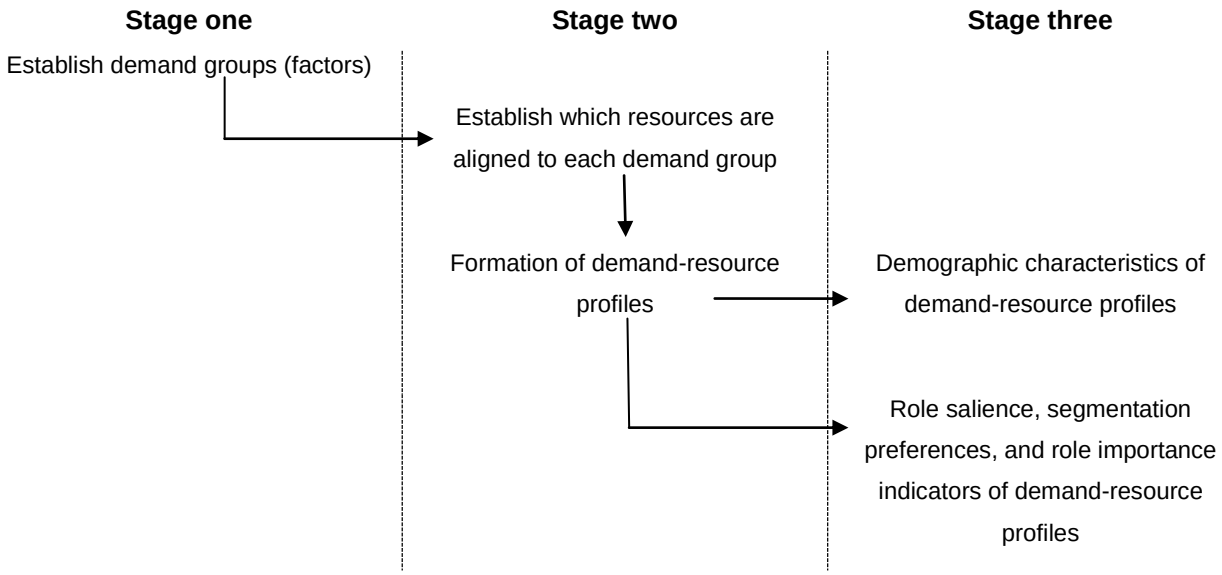

Figure 3-6. Outputs of the three analysis stages.

3.9 Research approaches in construction management

Within the construction management research domain, the dominant research approach has been positivist and quantitative (Dainty, 2008; Fellows, 2010; Seymour, Crook and Rooke, 1997). In a review of all papers published in Construction Management and Economics in Volume 24, 2006, Dainty (2008) found that of the 107 papers published, 76 used quantitative methods which adopted a positivist perspective, 9 used qualitative methods exclusively and adopted an interpretative perspective, and 12 papers used a mixed methods approach which comprised inductive and deductive perspectives. Dainty (2008) suggests that much of the research conducted within the construction management domain "*could be considered social science or sociological research, which is aimed at understanding the social structure and patterns of interaction between those working within and effected by, the built environment and the agencies and institutions which structure it*" (p.6). As such, Dainty (2008, p.7) suggests that the on-going adherence to natural science methodologies and reductionist approaches to social enquiry raises questions on the ability to provide a rich and nuanced understanding of the construction management domain.

Fellows (2010, p.10-11) states that "*latterly, the qualitative, constructivist paradigm gained ascendancy, employing interpretivism, grounded theory, ethnomethodology*" in construction management research. However, the methods applied in qualitative research have been somewhat limited, with an over-reliance on interviewing (Dainty, 2008). In Dainty's (2008) review of published papers, of which 9 used qualitative methods exclusively, apart from an over-reliance on interviews, focus groups, workshops, group interviews, observation, and document or textual analysis were applied, albeit sparsely. However, interviews have been criticised on a number of grounds, such as the truthfulness of the interviewee (Atkinson,

Coffey and Delamont, 2003; Dean and Whyte, 1958) and on the differences between what people say and do (Deutscher, 1973). Given these criticisms, Hammersley (2003) believes that interview data should be handled carefully but that interviewing remains useful when combined with other methods. An over-reliance on interviews in qualitative methods applied in the construction management domain, therefore, could be perceived as a constraint or limitation.

There has been a call from the construction management research community to consider mixed method approaches as a means to gain richer insights and a more complete understanding of social phenomena. For example, the mixed methods approach has been suggested as of a way of "*better understand(ing) the complex networks of relationships which shape industry practice. This radical perspective eschews traditional dualism by suggesting that no single methodology can ever provide a complete picture of the projects and organisations that form the arenas for construction management research*" (Dainty, 2008, p.11). Similarly, Fellows (2010, p.11) contends that mixed methods can "*yield a holistic paradigm involving integration of previously individual paradigms, and their adopted methods of investigation, into a more complex, and, arguably, realistic view*". Abowitz and Toole (2010, p.108) concur with these sentiments by stating that "*combining quantitative and qualitative approaches in research design and data collection, however, should be considered whenever possible. Such mixed-methods research is more expensive than a single method approach, in terms of time, money, and energy, but improves the validity and reliability of the resulting data and strengthens causal inferences by providing the opportunity to observe data convergence or divergence in hypothesis testing*". As discussed in an earlier section of this Chapter, mixed method approaches have known strengths and limitations. Despite these limitations (Creswell, 2009; Punch, 1998) a mixed method approach may have advantages over a single-method approach. In this context therefore, it is more helpful to view qualitative and quantitative as complementary rather than competing and opposing approaches (Loosemore, Hall and Dainty, 1996), and that methodology be driven by the research question under investigation rather than paradigm (methodology) or method (Teddlie and Tashakkori, 2011).

3.10 Research approaches in work-life

Within the work-life research domain, the dominant research approach has been positivist and quantitative (for example: Allen and Armstrong, 2006; Allis and O'Driscoll, 2008; Bakker, Demerouti and Dollard 2008; Rothbard and Edwards, 2003; Sahibzada, Hammer, Neal and Kuang, 2005; Smith and Gardner, 2007). Furthermore, research methods used in work-life research have been criticized for their reliance on survey data which incorporates a cross-

sectional design (Barnett, 1998; Greenhaus and Parasuraman, 1999). A reliance on cross-sectional design methods provides limited information about causal relations on work-life relations over time (Casper *et al*. 2007). Casper *et al.* (2007, p. 35) contend that "*given the heavy reliance on surveys, greater diversity is also needed in data collection methods to increase confidence in specific research findings*". This may be achieved through designs which incorporate triangulation of data as well as diversity in data collection methods.

In a review of work-life research in Australia, Bardeol, De Cieri and Santos (2008, p.329) state that there is a "*dominance of survey-based research*". Research undertaken on the work-life experience of workers in the Australian construction industry has primarily been cross-sectional and survey based (for example, Lingard, 2004; Lingard and Francis, 2004, 2005a, 2005b, 2007, 2008; Lingard and Lin, 2004; Lingard and Sublet, 2002), and which has taken on a positivist approach. There are a few exceptions, however, whereby interviews, focus groups, and diaries have been utilised (for example, Bradley, Brown, Lingard, Townsend and Bailey, 2010; Lingard, *et al*. 2008, 2010b, 2012; Townsend, Lingard, Bradley and Brown, 2011; Turner *et al.* 2009).

3.11 Summary

This research applied a mixed methods approach which is embedded within a constructivist framework. Given the philosophical position and research design applied in this research, it might appear that the researcher opposes the positivist and quantitative approach taken by the construction management research community and the work-life research community. On the contrary, there is a place for both constructivist and positivist approaches in the construction management and work-life domains, and this will be driven by the research problem. In this instance, the research problem called for constructivist based research as the issue under investigation was exploratory in nature and sought to understand people's experiences which are self-referent and subjective. Furthermore, as far as the researcher is aware, Q Methodology has yet to be applied to research conducted in the construction management domain or the work-life domain.

This chapter outlined the research questions and describes and justifies the research design and methodology which is used to address the questions. The philosophical approach undertaken in this study is described, and the use of Q Methodology and survey research is justified. This chapter provides background and context for the next chapter, which describes Q Methodology and its various components.

4 Chapter Four: Q METHODOLOGY

4.1 Introduction

Q Methodology is used in this research to reveal how workers engaged in the Australian construction industry experience demands in the work, family, and community domains. Q Methodology has been established for over seventy years and has been used by researchers whose epistemological position sits within a constructivist framework rather than a positivist framework. Q Methodology, developed by Stephenson (1953), is a research methodology used to reveal subjective structures, attitudes, perspectives and experiences from the standpoint of the person being observed (Brown, 1996, p.565). Q Methodology has been applied to many diverse topics, such as health and illness (Kraijo, Brouwer, de Leeuw, Schrijvers and van Exel, (2012), environmental issues (Addams, 2000), foster children (Ellingsen, 2011), and leadership (Woods, 2011). Given that Q Methodology has had limited application in the construction management and work-life domains, this chapter will outline the various components of the methodology. This chapter will also provide context for the subsequent chapter which outlines the development and piloting of the Q research instrument used in this study.

4.2 Using Q Methodology to measure subjective understanding

Q Methodology was developed by Stephenson (1953) specifically to measure subjectivity. Subjectivity is defined as "*an individual's personal point of view*" (McKeown and Thomas, 1988, p.5). Through the application of Q Methodology, participants actively configure their subjective representation of a topic, by modelling their viewpoint in the form of a Q sort. Meaning is not a categorical construct in Q Methodology, rather it is contextual, discursive and social. It is formative, emergent and contingent and must be elaborated and understood, rather than reduced (Goldman, 1999, p.592). Like other research techniques, Q Methodology involves data gathering, analysis and interpretation, and in most instances the researcher superimposes categories or meaning on the data. However, while Q Methodology involves the artificial categorising of statements (via factor analysis), this artificiality is replaced by categories that are meaningful to the sorter. It is individuals own meanings that are used to categorise the data, not research-led categories that are attributed *a priori* (Watts and Stenner, 2005, 2012). In this regard therefore, subjective response is not what is left over after the factoring process; rather, the subjectivities themselves are the categories of responses (Brown, 1980).

4.3 Abductory inference and Q Methodology

Peirce (1992) distinguishes between three forms of scientific inference: abduction, induction and deduction. Abduction is concerned with exploring the data, finding a pattern, and suggesting a plausible hypothesis. Induction in concerned with building a logical and testable hypothesis based upon plausible premises. Deduction is concerned with the approximation towards the truth, proving that something must behave in a certain way (Goldman, 1990). Peirce (1992) argues that abduction is the form of inference which extends knowledge, essentially a rule that introduces new hypotheses, impelling the inquiry onwards.

Stephenson (1953) engaged with the notion of abductive inference, first proposed by Peirce. Peirce (1992) contends that abduction and deduction are the conceptual understanding of phenomena, while induction is the quantitative verification. At the stage of abduction, the goal is to explore the data, find a pattern, and suggest a plausible hypothesis with the use of categories, which is aligned with the aim of Q Methodology (Goldman, 1990; Watts and Stenner, 2005, 2012). Abduction is to look for a pattern in a phenomenon and suggest a hypothesis (Peirce, 1992) and this is where Q methodology is placed within a scientific inference framework (Goldman, 1990).

The objective of abduction is to determine which hypothesis or proposition to test, not which one to adopt or assert (Sullivan, 1991). Peirce (1992) contends that classification plays a major role in developing a hypothesis, whereby the characters of a phenomenon are placed into certain categories (Peirce, 1992, as cited in Yu, 1994). After suggesting a plausible hypothesis, the next stage is to refine the hypothesis with logical deduction. Deduction is drawing logical consequences from premises. The conclusion is true given the premises are true also (Peirce, 1992). Q Methodology is considered a sound method for conducting exploratory research and investigating underlying perceptions (Anandarajan, Paravastu and Simmers, 2006; Watts and Stenner, 2005), whereby propositions and hypotheses can be formed and used in subsequent research.

4.4 Q Methodology as a mixed method

Strauss and Corbin (1990, p. 17) differentiate between qualitative and quantitative research by contending that "*by the term qualitative research we mean any kind of research that produces findings not arrived at by means of statistical procedures*". Based on Strauss and Corbin's (1990) definition therefore, Q Methodology would be described as a quantitative method as it calls upon statistical procedures. However, based on Creswell's (2009, p.15) definition of methods as "*the forms of data collection, analysis and interpretation*" used in a research, Q Methodology is better described as a mixed method (Brown, 1980, 1993, 1996;

Stenner and Stainton Rogers, 2004; Watts and Stenner, 2005). Q Methodology combines the interpretative component of qualitative analysis with the statistical technique rigour of quantitative analysis. It explores patterns of subjective views of individuals and uses the statistical technique of factor analysis to systematically examine the range of viewpoints held by respondents. Importantly, "*statistical analysis brings into relief subtle areas of similarity and difference between individual viewpoints that would otherwise be very difficult to discern*" (Woods, 2011, p.324). Brown (1993, p.107) emphasises that "*in Q, the role of mathematics is quite subdued and serves primarily to prepare the data to reveal their structure*". Once the structure has been revealed, interview data which is essentially qualitative in nature is used as a method by which to provide context and understanding in the interpretation of the factors.

4.5 Components of a Q Study

In his description of Q methodology, Stephenson (1953) distinguishes between methodology, method and technique. Methodology refers to the philosophical and conceptual matters that serve to justify the technique and method with respect to the subject matter of subjectivity (Brown, 2009). Within Q Methodology 'technique' refers to the Q sort, and 'method' refers to factor analysis. Research which utilises Q Methodology applies six distinct stages. These stages are: (1) concourse generation, (2) Q sample selection, (3) P set selection, (4) Q sorting procedure, (5) Q factor analysis, and (6) interpretation of emergent categories. The six stages of a Q study are summarised in Table 4-1, and are outlined in more detail in the following sections.

Table 4-1. Stages of a Q study.

Stages of research	**Elements of Q Methodology**
Broad topic under study	Concourse
Focus of topic under study	Q sample
Participant sample	P set
Data collection instrument	Q sort
Analysis	Correlation and factor analysis
Interpretation	Factor interpretation

Some published studies have reported utilising the Q sorting procedure as a method of data collection, however have not applied all of the stages of Q Methodology (Brown, 1993; Stanton Rogers, 1995). The sorting process alone does not represent the entire process of Q Methodology, and this is a common misinterpretation of this methodology (Nicholas, 2011). Q Methodology was created for the study of behaviour by implicitly using the combination of the Q sort process and the pattern analysis that utilises factor analysis. It is this combination

that allows Q Methodology to be a measure of subjectivity. The sorting process alone or the sorting process used with other types of analyses is not Q Methodology but instead, a misinterpretation of Q Methodology (Ramlo & Nicholas, 2009).

4.6 Concourse

In Q Methodology, concourse refers to the population of items for any context or situation. The volume of statements on a given topic was originally referred to as a population or trait universe (Stephenson, 1953), but has been renamed concourse (Stephenson, 1978) to indicate the running together of ideas in thought (Brown, 1997). Brown (1997) refers to a concourse as the "*common coinage of societies large and small, and is designed to cover everything from community gossip and public opinion to the esoteric discussions of scientists and philosophers*" (Brown, 1997, p.7).

In Q Methodology, the concourse is usually comprised of a set of statements about a particular topic, although images, objects and sounds can be used. For example, Kinsey (1991) used a sample of Gary Larson cartoons, and Grosswiler (1992) used a sample of writings, pictures and music. Concourse items can be elicited from any number of sources including the academic literature, formal interviews, informal discussions, focus groups, media and pilot studies (Brown 1993; Watts and Stenner, 2005, 2012).

4.7 Q sample selection

A concourse may consist of several hundred items. A subset of statements, referred to as a Q sample, is drawn from this concourse and it is this set of items which is presented to participants in the form of a Q sort. The main goal in selecting a Q sample "*is to provide a mixture which, in major respects, contains the comprehensiveness of the larger process being modeled*" (Brown, 1993, p.99). Q samples are made up of items which are presumed to be relevant to the topic at hand and are chosen to ensure coverage of all possible sub issues (McKeown and Thomas, 1988). Watts and Stenner (2005) contend that even with effective piloting, there is a sense that that the Q sample can never be complete as there is always potentially 'something else' that could be said about a given situation. This is of little importance however, "*for the procedural detail of Q methodology ensures that a Q set only needs to contain a representative condensation of information*" (Watts and Stenner, 2005, p.75).

The process of developing a Q sample is one that requires thorough and careful attention. Curt (1994) contends that the development of the Q sample is noticeably a craft. Watts and Stenner (2005, p.75) note that the "*Q methodologist must carry out this task skilfully,*

patiently and with an appropriate application of rigor". As a result, the time and effort involved in the development of the final Q sample can take up the bulk of the time when undertaking a Q study (Curt, 1994, p.120).

4.7.1 Q sample size

Brown (1980, p. 28) clarifies that "*in Q, samples are in terms of statements or other stimuli drawn from some parent population*". The exact size of the final Q sample is largely dictated by the goal to obtain a broad representation of items from the parent concourse. Some Q Methodologists contend that a satisfactory number of items in a Q sample ranges between 40 and 80 (Curt, 1994; Stainton Rogers, 1995). Other Q Methodologists, such as Brown (1986), contend that the number of statements in a Q sample typically range in number from 40 to 60. Any less than 40 items in a Q sample may be an issue due to inadequate coverage of the concourse. Any more than 80 items and the Q sorting process may become cumbersome for participants (Watts and Stenner, 2005).

4.7.2 Preparing the Q sample

Once the final Q sample has been established, the items will be prepared for the Q sorting process. In the case where the Q sample is made up of statements, each statement will be presented on an individual card. The researcher must ensure that each statement is clear, precise and unambiguous, and duplication between statements is removed. The statement should be written in language that is suitable for the intended participants, such as level of literacy and use of technical words (Watts and Stenner, 2012).

4.7.3 Preparing the sorting grid

All of the items making up the final Q sample will be presented on individual cards. These individual cards will be sorted onto a grid by participants. The exact configuration of the grid will vary according to each research project. It is common practice to set up the grid as an inverted quasi-normal distribution (refer to Figure 4-1 for an example), with a continuum of seven, nine, eleven or thirteen point scale. Statistically, scatter and distribution of the items are of little importance within the correlational and factor-analytical framework of Q Methodology (Brown, 1980, 1986; Cottle and McKeown, 1981; McKeown and Thomas, 1988; Watts and Stenner, 2005). This means that the chosen distribution *"actually makes no noticeable contribution to the factors which emerge from a particular study*" (Watts and Stenner, 2005, p.77). In this sense, an unforced or 'free' distribution is also a possibility for a sorting grid. A 'free' distribution allows participants to assign any number of items to any of the available ranking positions (Stenner, Watts and Worrell, 2008). Some researchers favour

a forced distribution as it is a convenient way of facilitating the rankings of items by participants. Methodologically, the use of a forced or free distribution will be determined by the 'condition of instruction' and the participant's capacity to reflect their point of through the Q sort. Chapter 5 addresses this issue in relation to the current research.

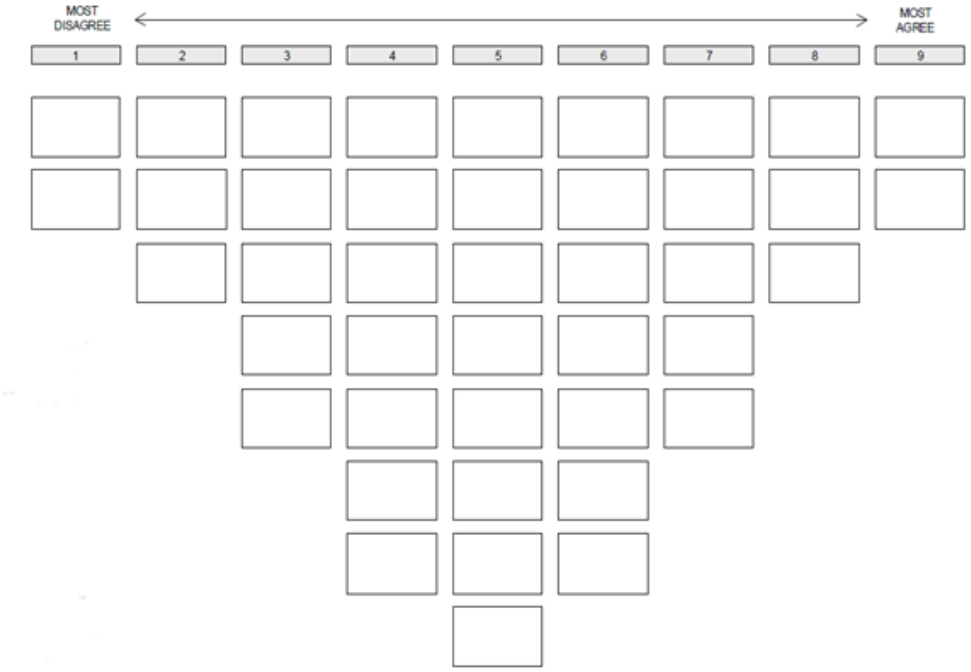

Figure 4-1. An example of an inverted quasi-normal distribution grid.

4.8 P set selection

Q Methodology has no interest in estimating population statistics; rather, the aim is to sample the range and diversity of views expressed, not to make claims about the percentage of people expressing them (Kitzinger, 1987). This sentiment is reflected in the P set. The P set is a structured sample of respondents who are theoretically relevant to the topic under consideration. Respondents are chosen because of their relevance to the goals of the study (McKeown and Thomas, 1988). Respondents are strategically sampled in order to ensure that a wide selection of viewpoints are represented in relation to the given topic under investigation (Stenner, Watts and Worrell, 2008; Watts and Stenner, 2005, 2012). However, in the case where a Q study seeks to investigate particular concepts, respondents may not 'group together' according to demographic characteristics. Watts and Stenner (2005, p.80) contend that "*it is better to avoid too many assumptions a priori, particularly where these assumptions are based on preconceived demographic notions. The whole point of Q methodology is to allow individuals to categorize themselves on the basis of the item configurations they produce (and hence via the viewpoints they express). Its function is exploratory*".

Large numbers of respondents are not required for a Q Methodological study (Brown 1980, 1986, 1993; Dziopa and Ahern, 2011; McKeown and Thomas, 1988; Stainton Rogers, 1995; Watts and Stenner, 2005). The number of participants will depend on whether the study focuses on 'intersubjectivity' or 'intrasubjectivity'. Typically, studies of intersubjectivity are considered 'extensive' because the intent is to determine the variety of views on an issue (McKeown and Thomas, 1988). Therefore, participant numbers typically range from 40 to 60 (Brown, 1986; Stenner, Watts and Worrell, 2008; Watts and Stenner, 2005) although this number will vary according to the nature and purpose of the study, and "*is only a rule of thumb*" (Watts and Stenner, 2005, p.79). Brown (1993, p.104) contends that *"even in studies of public opinion, samples of persons rarely exceed 50*". In contrast, an 'intensive' study reflects interest in 'intrasubjectivity', which is an in-depth examination of one person who sorts the Q sample under many different conditions on instruction. 'Intensive' analysis is not limited to a single case however, as several people can be studied in detail (Brown, 1980; 1993; McKeown and Thomas, 1988).

In reviewing studies which have applied Q Methodology, the number of participants has varied, however on all occasions large numbers have not been utilised. For example, Anandarajan, Paravastu and Simmers (2006) used a sample of 25 participants; Jacobson and Aaltio-Marjosola (2001) used a sample of 16 participants; Woods (2011) used a sample of 14 participants; Brown and Prirtle (2008) used a sample of 40 participants; Chang, Kim, Kong, Kim, Ahn and Cho (2008) used a sample of 26 participants; and Gustafson, Hanley and Popovich (2008) used a sample of 39 participants. In relation to number of participants, Brown (1980, p. 260) stressed that "*what is of interest ultimately are the factors with at least four or five persons defining each: beyond that, additional subjects add very little"*.

4.9 Q Sorting procedure

Q sorting is a process whereby participants model their point of view by rank ordering the Q sample on a grid along a continuum defined by a condition of instruction (Brown, 1980, 1996; McKeown and Thomas, 1988). The Q Methodological ranking procedure, referred to as Q sorting is "*the technical means whereby data are obtained for factoring"* (Brown, 1980, p.17). The Q sample items are commonly presented to participants in the form of a pack of cards, with one statement per card. A 'condition of instruction' is a guide for sorting Q sample items. The instructions are designed to establish a mental context within which the participant will make decisions while ranking items (Brown 1980, 1993; McKeown and Thomas, 1988; Ramlo & Nicholas, 2009). Once all of the Q sample items have been sorted onto the grid, participants may review and modify their configuration until they are satisfied that their Q sort accurately reflects their point of view. Q sort shares some similarity with the

Likert survey scale in that the distribution on the grid typically ranges from “least like my view” to “most like my view”. However, it differs from Likert scale surveys in that Q sorting involves participants physically sorting items relative to each other based upon that participant’s opinion in relation to the condition of instruction. In contrast, participants respond to each item of a Likert scale in ‘isolation’ to the other items. For the participant, each item of the Likert scale ‘stands alone’ and has no relationship to other items.

4.10 Post Q Sort information

Once the Q sort has been completed, supporting information is sought from the participant. This is done via a post-sorting interview or a post-sorting questionnaire, which seeks to explore the following issues: (a) how the participant has interpreted the items given especially high or low rankings in their Q sort, and what implications those items have in the context of their overall viewpoint; (b) if there are any additional items they might have included in their own Q sample; and (c) if there are any further items about which the participant would like to pass comment, which they have not understood, or which they simply found confusing (Watts and Stenner, 2005, p.78). Post sort information is an important part of the Q methodological procedure as it aids the later interpretation of the sorting configurations (and viewpoints) captured by each of the emergent factors (Brown, 1980, 1993; Stenner, Watts and Worrell, 2008; Watts and Stenner, 2005).

4.11 Data analysis and interpretation

Q Methodology utilises a by-person correlation and factor analytic procedure in the analysis of data obtained from Q sorts. In the procedure followed by Q Methodology, it is the overall configurations produced by participants that are intercorrelated and factor analysed. In the first instance, a correlation matrix of all Q sorts is calculated, which represents the relationship of each Q sort configuration with every other Q sort configuration (not the relationship of each item with every other item). Next, this correlation matrix is subject to factor analysis.

Factor analysis is a statistical technique that simplifies complicated data into overarching patterns. By reducing a larger number of variables into a smaller number of 'factors', it uncovers the latent structure of a dataset. Q factor analysis differs from the method introduced by Spearman (1904). In Q factor analysis, correlations between persons are factored. In Spearman’s (1904) factor analysis, correlations between variables are factored. Q factor analysis determines whether a set of people cluster together rather than a set of variables (Brown, 1980). Within Q Methodology, a factor indicates a shared viewpoint on a given topic, whereby those participants share a common understanding, but differently from

participants loading onto a different factor. Once the factor structures have been identified, both demographic data and post sort interview data can be utilised to provide context and make sense of the factors. Data analysis and interpretation methods used in Q Methodology are addressed in further detail in Chapter 8.

4.12 Criticisms of Q Methodology

4.12.1 Reliability

Reliability refers to the extent to which "*data collection techniques or analysis processes will yield consistent findings*" (Saunders *et al*. 2009, p.156). A test or measure is considered reliable if the same test is administered on two occasions and an individual's score is similar on these two occasions (Punch, 1998). There appears to be some disagreement within the literature on the reliability of the Q sort instrument. One position contends that when repeated on the same persons, Q Methodology does not necessarily yield the same results which has led to concerns regarding reliability. However, social psychologists do not consider this as a problem as there is no expectation that an individual will express the same views on two separate occasions (Stainton Rogers, 1991, cited in Cross, 2005, p.211). The second position contends that a Q sort can be replicated with more than 80% consistency (Brown, 1980, 1993). Nicholas (2011) also found support for reliability via a test-retest case study. Brown (1980, p.289) substantiates this claim of reliability by stating that "*a response is reliable to the extent behavior at some point in time (a) is the same at some later point in time (b) under stable conditions*". A post hoc test was conducted to ascertain the reliability of the Q instrument used in this research. The post hoc test indicated satisfactory reliability, and the results are reported in Chapter 5.

4.12.2 Participant bias

Participant bias may pose a threat to reliability (Saunders *et al*. 2009) in the case where a participant completes a Q sort which reflects what they think is acceptable rather than how they truly feel about the issue (Cross, 2005). One way in which to address participant bias is to take steps to ensure the anonymity of participants (Saunders *et al*. 2009). Furthermore, in the case of a Q sort there are no 'right' or 'wrong' responses, therefore communication of this sentiment to the participant may address the issue of responding in a way which is socially desirable. In order to address the issue of possible participant bias, participants were ensured confidentiality of the results. This was communicated to participants by using two methods. Firstly, anonymity and confidentiality of results was indicated in the Project Information Statement and Consent Form, which forms part of the ethical obligations of the researcher. A copy of the Project Information Statement and Consent Form are outlined in

Appendix 8a and 8b. Secondly, during the data collection session, each participant was advised that their data would remain anonymous and confidential. Each participant was assigned a pseudonym which was used in the subsequent reporting of results. Furthermore, as part of the data collection procedure, participants were reminded that there were no right or wrong answers. This procedure is reflected in Chapter 8.

4.12.3 Researcher bias in the Q sample

It has been argued that limitations are automatically placed on the participant's Q sort response as the statements have been selected by the researcher. Subsequently, there are only limited viewpoints that can be expressed (Cross, 2005). In order to more accurately represent the views of the participants and not rely solely on the decision making of the researcher in choosing the final selection of statements (Q sample), interviews or focus group discussions about the subject matter can be conducted and the statements derived from these can be used in the Q sort (Cross, 2005). Furthermore, Watts and Stenner (2005) contend that individual Q sample statements do not have a single, predetermined meaning. Instead, the overall configuration of items gives meaning rather than individual items. Chapter 5 describes the methods used to address the issue of possible researcher bias in the Q sample.

4.12.4 Researcher bias in interpretation

There is risk of researcher bias at the interpretation stage of the research. However, it is important to note that the factors which emerge from a Q study are the result of the sorting activity of participants themselves, rather than of built-in definitions of the measurement instrument (Brown, 1980). Additionally, a post sort interview with each participant about their card placement can minimise researcher bias by using participants' rationale to explore the factors (Gallagher and Porock, 2010). A further possible form of researcher bias that has been raised is that during the analysis phase, factors may be rotated in ways that suit the researcher and not the data. Brown (1980) and McKeown and Thomas (1988), however, have demonstrated that the underlying structure of factors is not changed with rotation. A description of factor rotation in the context of Q data analysis is outlined in Chapter 9.

4.13 Summary

This chapter outlined the various components of Q Methodology, and provides the context for the next chapter. The next Chapter outlines the development of the Q research instrument, which includes the process and outcomes of the pilot study.

5. Chapter Five: DEVELOPMENT OF THE Q INSTRUMENT

5.1 Introduction

Three data collection instruments were utilised in the research, which comprised of: (i) a questionnaire; (ii) a Q sort of demands originating from the work, family and community domains followed by a post sort interview; and (iii) a survey of resources followed by an interview. Development and pilot testing of the Q instrument was conducted over two distinct stages. Firstly, the Chapter will outline how the Q instrument was developed. The concourse generation, Q sample selection and the Q sorting procedure will be outlined. Secondly, the Chapter will describe how the Q instrument was pilot tested and what revisions were made to the initial instrument as a result of participant feedback. Finally, the Chapter will outline the results of the post hoc test which considered the reliability of the Q instrument.

5.2 Development of the Q instrument

Research which utilises Q Methodology applies six distinct stages. These stages are (1) concourse generation, (2) Q sample selection, (3) P set selection, (4) Q sorting procedure, (5) Q factor analysis, and (6) interpretation of emergent categories. The development of a Q instrument requires that the researcher generate a concourse, select a Q sample, and develop a Q sorting procedure. The chapter will outline these three stages. P set selection, factor analysis and interpretation of emergent categories will be outlined in following Chapters.

5.2.1 Concourse generation of demands

In Q Methodology, concourse refers to the population of items for any context or situation. The concourse is usually comprised of a set of statements about a particular topic, although images, objects and sounds could be used. Concourse items can be elicited from any number of sources including the academic literature, formal interviews, informal discussions, focus groups, media and pilot studies (Brown, 1993; Watts and Stenner, 2005).

This research seeks to explore how workers in the Australian construction industry experience work-based demands, family-based demands and community-based demands. In this context, the concourse generation focused on exploring the various types of demands experienced by workers of the construction industry. Concourse generation commenced in February 2010 with a review of the academic literature and was completed in June 2010 (step 1). Following this, formal interviews were conducted from July –August 2010 to review and verify demands identified through the academic literature (step 2), which is outlined in

more detail Section 5.3. These tasks and time frames (steps 1 and 2) are summarised in Table 5-1.

Table 5-1. Schedule of instrument development steps and timeframes: Identification and verification.

	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10
Q instrument									
1. Identification of demands via literature review	x	x	x	x	x				
2. Verification of concourse – demands						x	x		
3. Pilot of the Q instrument							x	x	x
Resource instrument									
4. Identification of resources through literature	x	x	x	x	x				
5. Verification of resources						x	x		
6. Pilot of the importance of resources instrument							x	x	x
Questionnaire instrument									
7. Questionnaire development			x	x	x	x	x		
8. Pilot of the questionnaire								x	x

Demands refer to physical, psychological, social or organizational features originating from the work, family or community domains that require physical, mental, or psychological effort that take time and energy (adapted from Bakker *et al.* 2005). While the literature has primarily focused on demands as a negative feature, Dolcos and Daley (2009) contend that demands are not necessarily negative. For example, spending time with family may be perceived as a positive experience although it would be defined as a 'demand'.

A review of the work-family literature was conducted to identify demands and their corresponding definitions. The following databases were searched: Emerald, Proquest, Business Source Premier (EBSCOhost), Expanded Academic (Gale), ISI Web of Science, Science Direct (Elsevier), and the Centre for Work + Life. In addition to the databases, a book search of the library catalogue was also undertaken. Given that demands were being considered within a work-life fit paradigm, the work-life fit literature was reviewed in the first instance using the following key words: fit, work-life fit, work-family fit, work-home-community fit, demands, work demands, family demands, home demands, and community demands. However, given the limited nature of research in the work-fit domain, the review was then extended to include demands in conjunction with work-life conflict, work-family conflict, role strain, work pressure, work-life interaction, work-family interaction, work-home interaction, and work-home-community interaction.

Through the review process, identified demands were recorded, as were the corresponding definitions. In cases where two or more definitions were conflicting or inconsistent, the definition that had been most cited in the literature was recorded. In the instances where no definition was offered in the literature, a definition was developed. As the definitions were going to be used by workers during a later stage of the research, a conscious decision was made to use plain and simple language. This was particularly critical as the demands descriptors needed to be accessible to all workers irrespective of level of education and literacy (Watts and Stenner, 2012). Furthermore, definitions were written in the second person such that they included the use of ‘you’ and ‘your’. 'You' language helps creates the sense that the writer is talking directly to the reader so that the reader feels engaged and involved (Nazario, Borchers and Lewis, 2010).

The source of the demands generated from the academic literature is outlined in Appendix 5a.

5.2.1.1 Work demands

Seventeen work demands were identified through the academic literature review, as outlined in Table 5-2.

Table 5-2. Work demands identified through the literature.

	Demand	Description
1.	Time in paid work	The time you spend working. This includes time spent at your work location as well as at home on work related tasks. This does not include commuting time to and from work.
2.	Commuting time	Length of your daily commuting time between home and work.
3.	Non-standard work schedule	You work during the evening, night or weekend. Often referred to as shift work.
4.	Work over-load	Not enough time to complete your assigned work duties. You work hard over a period of time to maintain a work load that is considered excessive.
5.	Over time hours	Hours worked over and above your standard work week. Overtime hours may be paid or unpaid and this will depend on your work arrangement with your employer.
6.	Job insecurity	Perceived likelihood of involuntary job loss.
7.	Overnight travel for work	Being away from home the whole night (whereby alternative accommodation is required).
8.	Work activities at home	Bringing your work home at the end of the day or on weekends, or being contacted at home by your supervisors, co-workers or clients.
9.	Emotional strain at work	Emotionally stressful work situation.
10.	Physical strain at work	Physically tiring work.
11.	Mental strain at work	Sustained concentration due to challenging / difficult work.
12.	Industry expectations	The expectations the industry places on workers, such as a long working hours culture.
13.	Organizational expectations	The expectations the organization places on the worker, such as long working hours culture, communication styles, dress code, decision making.
14.	Supervisor expectations	Your supervisor places demands on you, which may take the form of tight deadlines, or unexpected/unplanned work.

	Demand	Description
15.	Co-worker expectations	Your co-workers place expectations on you.
16.	Interpersonal conflict at work	You experience conflict at work with internal stakeholders (colleagues, co-workers, supervisor, manager) and external stakeholders (customer, supplier).
17.	Project characteristics	The unique characteristics of a project such as a fixed end date, milestones, and fixed cost.

5.2.1.2 Family demands

Eleven family demands were identified through the academic literature review, as outlined in Table 5-3.

Table 5-3. Family demands identified through the literature.

	Demand	Description
1.	Time caring for your children	Time you spend caring for your own children.
2.	Time caring for your relatives children	The time you spend caring for your relatives / extended family's children.
3.	Time caring for your friends children	Time you spend caring for friends children.
4.	Time caring for elderly relatives	The time you spend caring for your elderly relatives (including parents, grandparents, aunts and uncles).
5.	Time in household tasks	Time you spend doing household chores such as cooking, cleaning, laundry, gardening.
6.	Relationship conflict	Conflict experienced with your spouse (wife/husband) or partner.
7.	Children's problems	Your child/children experience physical, intellectual, emotional or behavioural issues.
8.	Unfairness in household work	You perceive there is unfairness in household work, whereby you unwillingly carry the majority of the load.
9.	Commuting time	The length of your daily commuting time between home and work.
10.	Family activities at work	Receiving calls or emails from your family members, paying bills, making appointments while at work.
11.	Undertaking formal training and education	Undertaking formal training and education. This may take place at a TAFE, university, or an accredited training organization.

5.2.1.3 Community demands

Six community demands were identified through the academic literature review, as outlined in Table 5-4.

Table 5-4. Community demands identified through the literature.

	Demand	Description
1.	Time allocated to volunteering	Time you spend in non-paid work, such as youth activities, community organizations or professional organizations.
2.	Emotional strain in volunteering	Volunteering activities you undertake are tense and stressful. For example, volunteering for the Country Fire Authority may be more tense and stressful compared to volunteering in a community garden.
3.	Time in religious and faith activities	Time allocated to activities required of you by your religious group, such as attending the place of worship.
4.	Hours and schedule of community services	Hours of community service organizations which you require are incompatible with your paid work hours, such as special care facilities for children with special needs, or elderly care.
5.	Hours and schedule of schools	The hours of school are incompatible with your paid work hours, making it difficult for you to provide care for your children outside of school hours.
6.	Limited or no access to public transport	You have limited or no access to public transport, such as buses, trains and trams.

5.3 Participants of the demand verification process

A panel of workers engaged in the Australian construction industry were invited to participate in an interview to verify demands that had been identified through the literature review. The purposive sampling strategy was utilised to obtain representation from a wide range of subsets of the construction workforce based on gender, age, occupation, relationship status, parental status and living arrangements. Of the nine participants, five were male and four were female. Two were aged between 21 – 30, four were aged between 31 – 40, one was aged between 41 – 50, and two were aged between 51 – 60. Of the nine participants, two were single, four were married, and three had a partner. Parental status varied among participants, with five having no children, two having children under 18, and two having children over 18. Living arrangements varied with one participant living with their parents, one living alone, one living with friends, one living with their wife and a child with a disability, one living with their partner, one living with their partner and children, two living with their wife, and one living with their husband and children. Eight of the participants were employed on a full time basis and one was employed on a part time basis. Table 5-5 outlines the demographic characteristics of participants in the verification stage.

Table 5-5. Demographic characteristics of participants in the verification stage.

Participant	Gender	Age category	Occupation	Relationship status	Parental status	Living arrangement
1	Male	21 - 30	Graduate Project Engineer	Single	No children	Live with parents
2	Male	51 - 60	Senior Manager	Married	Children over 18	Live with wife and child with a disability
3	Female	31 - 40	Architect	Partner	No children	Live with partner
4	Female	41 - 50	Risk manager	Partner	Two children under 18	Live with partner and children
5	Male	31 - 40	Architect	Single	No children	Lives alone
6	Male	51 - 60	Human Resources Manager	Married	Children over 18	Live with wife
7	Male	31 - 40	Human Resources Coordinator	Married	No children	Live with wife
8	Female	31 - 40	Quality and Safety Coordinator (part time)	Married	Two children under 18	Live with husband and children
9	Female	21 - 30	Health and Safety Coordinator	Partner	No children	Live with friends

5.4 Verification of demands

An interview was conducted with each participant at their place of employment between July and August 2010. Each interview took approximately 60 - 90 minutes and participant responses were manually recorded by the researcher (interviewer). The following process took place at each interview:

a) The researcher explained the definition of *work* to the participant. Work was defined as paid employment (Bardoel *et al*. 2008; Eby, Casper, Lockwood, Bordeaux and Brinley, 2005). Work may include unpaid overtime, but does not include unpaid domestic and voluntary work (Pocock, Williams and Skinner, 2009). Unpaid domestic work and voluntary work are included in the family and community domains. It was important that each participant had a consistent understanding of the work domain in preparation for the next step, in which work demands were reviewed.

b) The researcher explained the definition of *work demands* to the participant. Work demands are physical, psychological, social, or organisational features originating from work that require physical or psychological effort, which are associated with physiological impacts or psychological impacts (adapted from Bakker *et al.* 2005).

c) The participant was asked to review each work demand title and corresponding definition provided by the researcher for clarity of meaning. In cases where the meaning was deemed to be unclear, the participant was asked to suggest an alternate meaning. The list of work demands provided to participants is outlined in Section 5.2.1.1.

d) The participant was asked to identify additional work demands which had not been included on the list provided by the researcher. Where an additional work demand was identified, the participant was asked to define this demand.

e) For family demands, steps a) to d) were repeated. Family was defined as significant people and relationships in a person's private life. Based on this definition, family could extend beyond blood relatives and include close friends (adapted from Pocock *et al.* 2009). Family demands are physical, psychological, social, or organisational features originating from a person's family that require physical or psychological effort, which are associated with physiological impacts or psychological impacts (adapted from Bakker *et al*. 2005). The list of family demands provided to participants is outlined in Section 5.2.1.2.

f) For community demands, steps a) to d) were repeated. Community was defined as relationships of support and/or interaction between people that might be based on place, shared interest or identity (adapted from Pocock *et al.* 2009). Community demands are physical, psychological, social, or organisational features originating from the community that require physical or psychological effort, which are associated with physiological impacts or psychological impacts (adapted from Bakker *et al.* 2005). The list of work demands provided to participants is outlined in Section 5.2.1.3.

Many of the demands identified through the literature were refined through the verification process, and additional demands were identified by participants. A total of forty-three demands were verified through the concourse generation exercise and the final concourse is outlined below. The process of demand refinement is outlined in Appendix 5a.

5.4.1 Work demands

Through the verification process, some demands were refined and re-worded, and additional demands were identified, as outlined in Appendix 5a. Eighteen work demands formed part of the concourse, as outlined in Table 5-6.

Table 5-6. Verified work demands.

	Demand	**Description**
WD1.	Time in paid work	The time you spend working. This includes time spent at your work location as well as at home on work related tasks. This does not include commuting time to and from work.
WD2.	Commuting time	Length of your daily commuting time between home and work.
WD3.	Non-standard work schedule	You work during the evening, night or weekend. Often referred to as shift work.
WD4.	Work over-load	Not enough time to complete your assigned work duties. You work hard over a period of time to maintain a work load that you consider excessive.
WD5.	Over time hours	Hours worked over and above your standard work week. Overtime hours may be paid or unpaid and this will depend on your work arrangement with your employer.
WD6.	Job insecurity	Perceived likelihood of involuntary job loss.
WD7.	Overnight travel for work	Being away from home the whole night (whereby alternative accommodation is required).
WD8.	Work activities at home	Being contacted at home by your supervisors, co-workers or clients.
WD9.	Emotional strain at work	You experience stress and tension while undertaking your work activities.
WD10.	Physical strain at work	You undertake physically tiring work.
WD11.	Mental strain at work	You experience sustained concentration due to challenging / difficult work, or are pressured to undertake a task within a very limited amount of time.
WD12.	Industry expectations	The industry in which you work places expectations on you, such as long working hours.
WD13.	Organizational expectations	The organization places expectations on you, such as long working hours, communication style, dress code, decision making.
WD14.	Supervisor expectations	Your supervisor places expectations on you.
WD15.	Co-worker expectations	Your co-workers place expectations on you.
WD16.	Interpersonal conflict at work	You experience conflict at work with internal stakeholders (colleagues, co-workers, supervisor, manager) and external stakeholders (customer, supplier).
WD17.	Project characteristics	Projects impact your work through factors such as program changes, program acceleration, unplanned activities and geographical remoteness of the project.
WD18.	Undertaking training and education for work	During work time you undertake formal training and education for work related purposes. This may take place at work, TAFE, university, or an accredited training organization.

5.4.2 Family demands

Through the verification process, some demands were refined and re-worded, and additional demands were identified, as outlined in Appendix 5a. Sixteen family demands formed part of the concourse, as outlined in Table 5-7.

Table 5-7. Verified family demands.

	Demand	Description
FD1.	Time caring for your children	Time you spend caring for your own children.
FD2.	Time caring for your relatives children	Time you spend caring for children of your extended family.
FD3.	Time caring for your friends children	Time you spend caring for friends children.
FD4.	Time caring for relatives	Time you spend caring for your extended family (including parents, grandparents, aunts and uncles).
FD5.	Time caring for pets	Time you spend caring for your pets. This may include feeding, washing and exercising.
FD6.	Time in household tasks	Time you spend doing household chores such as cooking, cleaning, laundry, gardening.
FD7.	Household relationship conflict	You experience conflict with the people you live with. This may be your wife, husband, boyfriend, girlfriend, parents, children, housemate.
FD8.	Child with a disability	Your child has a physical, intellectual, emotional or behavioural disability and requires your help and support.
FD9.	Unfairness in household work	You perceive there is unfairness in household work, whereby you unwillingly carry the majority of the load.
FD10.	Family activities at work	Receiving calls or emails from your family members, paying bills, making appointments while at work.
FD11.	Health and fitness activities	Time you spend in health and fitness related team activities such as football and tennis, or individual activities such as gym and running.
FD12.	Undertaking formal training and education	Undertake formal training and education for self-development in your own time (rather than work time). This may take place at a TAFE, university, or an accredited training organization.
FD13.	Participating in self-interest activities	You undertake courses or classes related to your interests and hobbies, such as photography, learning a new language, or cooking. You may also participate in interest groups or clubs such as chess or astronomy.
FD14.	Time supporting your childrens activities	Time you spend supporting your children in the activities they undertake, such as watching them play sport or driving them to sports practice.
FD15.	Time supporting your grandchildrens activities	Time you spend supporting your grandchildren in the activities they undertake, such as watching them play sport or driving them to sports practice.
FD16.	Time in social activities	The time you spend socializing with other people.

5.4.3 Community demands

Through the verification process, some demands were refined and re-worded, and additional demands were identified, as outlined in Appendix 5a. Nine community demands formed part of the concourse, as outlined Table 5-8.

Table 5-8. Verified community demands.

	Demand	Description
CD1.	Time allocated to volunteering	Time you spend in non-paid work, such as youth activities, community organizations or professional organizations.
CD2.	Emotional strain in volunteering	Volunteering activities you undertake are tense and stressful. For example, volunteering for the Country Fire Authority may be more tense and stressful compared to volunteering in a community garden.
CD3.	Time in religious and faith activities	Time allocated to activities required of you by your religious group, such as attending the place of worship.
CD4.	Hours and schedule of health, welfare and community services	The hours of health and welfare community services which you, or the people you care for, require are incompatible with your paid work hours.
CD5.	Hours and schedule of schools	The hours of school are incompatible with your paid work hours, making it difficult for you to provide personal care for your children outside of school hours.
CD6.	Limited or no access to public transport	You have limited or no access to public transport, such as buses, trains and trams.
CD7.	Hours and schedule of self-interest courses and groups	The hours of courses or groups related to your interests and hobbies are incompatible with your paid work hours.
CD8.	Hours and schedule of training and education organizations	The hours of training and education organizations which you require access are incompatible with your work hours.
CD9.	Undertaking parent–based pre-school or school related activities	You participate in formal pre-school or school related activities such as parent-teacher interviews, tuckshop duty, fundraising activities.

5.4.4 Q sample selection

A subset of statements, referred to as a Q sample, is usually drawn from a concourse and it is this set of items which is presented to participants in the form of a Q sort. An unstructured Q sample is used in this research given that it is exploratory in nature. Unstructured Q samples are made up of items which are presumed to be relevant to the topic at hand and are chosen to ensure coverage of all possible sub issues (McKeown and Thomas, 1988). Items are selected that are broadly representative of the issues in the concourse. The unstructured sample therefore provides a "*reasonably accurate survey of positions taken or likely to be taken on a given issue"* (McKeown and Thomas, 1988, p.28). With unstructured samples it is possible that certain sub issues within the concourse may be over- or under-represented, therefore a skew could unintentionally be incorporated into the final Q sample (McKeown and Thomas, 1988).

The exact size of the final Q sample is largely dictated by the goal to obtain a broad representation of items from the parent concourse, however any less than 40 items in a Q sample may be an issue due to inadequate coverage of the concourse (Watts and Stenner, 2005). Given that 43 demands were identified and verified through the concourse generation exercise, it was considered that all demands would be included in the final Q sample. By using the entire concourse in the Q sample, the potential over- or under-representation of sub issues within the concourse was not applicable in this case.

5.5 Piloting the Q Instrument

This section of the Chapter will describe the process of piloting the Q instrument. Feedback from pilot study participants will be outlined, and refinements applied to the Q instrument in response to participant feedback will be described.

5.5.1 Purpose of the pilot study

van Teijlingen and Hundley (2001, p.1) suggest that "*one of the advantages of conducting a pilot study is that it might give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated*". Importantly, a pilot study is used to develop and test the adequacy of research instruments (Baker, 1994; van Teijlingen and Hundley, 2001, Watts and Stenner, 2012) and in this research it was considered essential to pilot the Q instrument prior to using it in the research. The pilot study focused on the Q sort technique, which encompassed the Q sample (statements), condition of instruction, the sorting grid, and the continuum from which the statements are ranked on the grid. The previous section of this Chapter outlined the identification and development of the concourse and the emergent Q sample which was utilised in the pilot study. van Teijlingen and Hundley (2001, p4) contend that "*researchers have an ethical obligation to make the best use of their research experience by reporting issues arising from all parts of a study, including the pilot phase*". Based on van Teijlingen and Hundley's (2001) notion, each component of the Q sort pilot study is outlined below, together with the feedback received from pilot study participants.

The pilot test of the Q instrument occurred from August to October 2010 (step 3), after completion of the identification of demands via the literature review (step 1) and partially concurrently with the verification of demands (step 2), as highlighted in Table 5-9.

Table 5-9. Schedule of instrument development steps and timeframes: Pilot.

	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10
Q instrument									
1. Identification of demands via literature review	x	x	x	x	x				
2. Verification of concourse – demands						x	x		
3. Pilot of the Q instrument							x	x	x
Resource importance instrument									
4. Identification of resources through literature	x	x	x	x	x				
5. Verification of resources						x	x		
6. Pilot of the importance of resources instrument							x	x	x
Questionnaire instrument									
7. Questionnaire development			x	x	x	x	x		
8. Pilot of the questionnaire								x	x

5.5.2 Participants of the pilot study

The panel of workers who participated in the verification of the Q concourse were invited to participate in a second session to undertake a Q sorting exercise. All participants agreed to participate in the pilot study. Each session took approximately one hour.

5.5.3 Q sample

All of the participants in the pilot study had also participated in an initial interview in which all demand statements had been reviewed for clarity of meaning, as well as identification of additional demands. Given that some months had lapsed between the initial interview and the pilot study, participants were asked to again consider whether the statements which formed part of the Q sample were clear and unambiguous.

The Q sample was made up of 43 statements including work demands, family demands and community demands. These demands were an outcome of the identification and verification phases as outlined in the earlier sections of this Chapter. The demands utilised in the pilot study are outlined in Section 5.4 of this Chapter. Each statement was printed onto a card, whereby the code on the top left hand side indicated the domain (w=work, f=family, c=community) along with a unique identifying number. The statement title was printed at the top of the card, and the statement description was printed under the title. Two statement examples which have been printed onto cards are shown below in Figure 5-1, ‘time in paid work’ and ‘commuting time’.

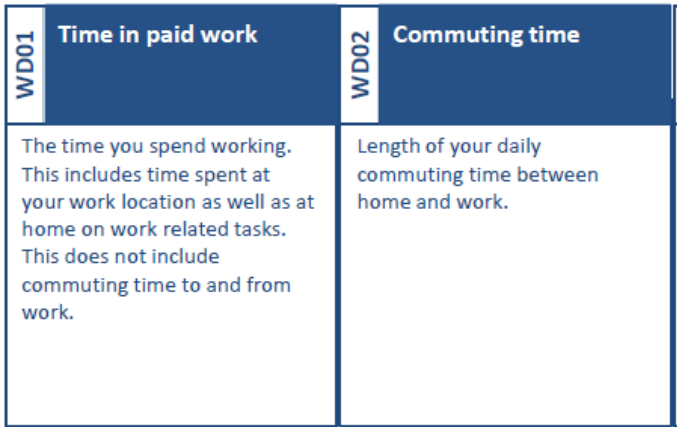

Figure 5-1. An example of the demands printed onto cards.

5.5.3.1 Clarity of meaning of statements

All participants advised that statements were clear and unambiguous. Subsequently, no further changes or amendments were suggested by participants to the statements which formed the Q sample. Given that there were no changes, the Q sample presented to participants of the pilot study was utilised in the data collection phase.

5.5.4 Q sort

All participants undertook a Q sort according to the following condition of instruction: "*To what extent do you currently experience this demand in your life?*" Participants were asked to rank-order the Q sample ranging from -4 (no extent at all) to +4 (very large extent) according to the following forced distribution, as shown in Figure 5-2.

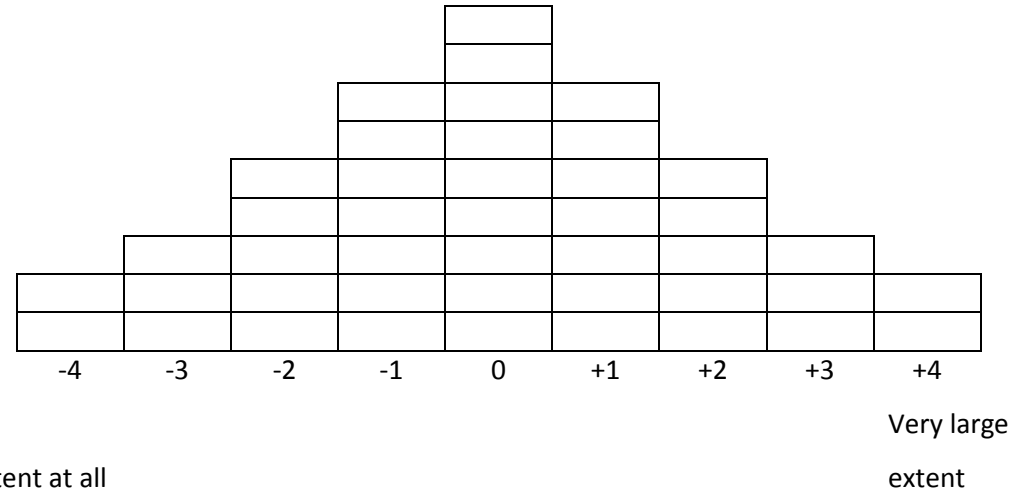

Figure 5-2. Q sort ranking grid used in the pilot study.

5.6 Feedback from the pilot study

Participants provided a range of both positive and constructive feedback regarding the pilot study including (i) condition of instruction; (ii) sequence of statements; (iii) types of statements; (vi) forced distribution; (v) ranking continuum, and (vi) ease of completion. Feedback is outlined in the next section of this Chapter.

5.6.1 Condition of instruction

Some participants noted that they forgot what the condition of instruction was during the sort and needed reminding. It was suggested that the condition of instruction be included above the sorting grid so that participants remained focused on what the question under study was: "*to what extent do you currently experience this demand in your life?*" This suggestion was taken up and the grid was amended to include the condition of instruction.

5.6.2 Sequence of cards (statements)

The cards were provided to participants in such a way that the work-based demand statements were grouped together, followed by the family-based demand statements, and the community-based demand statements. Some participants stated that grouping the statements according to domain (work, family and community) assisted them to process the information during the sorting procedure, as they were able to focus on the experiences in one domain, rather than constantly having to move between domains during the sort procedure. While it is possible that sequencing the cards in such a may introduce bias into the sorting process, this is addressed in two ways. Firstly, participants sort the statements relative to each other based upon that participant's opinion according to the condition of instruction. Secondly, after the statements have been sorted onto the grid, participants may review and modify their configuration until they are satisfied that their Q sort accurately reflects their point of view.

5.6.3 Types of statements

During one Q sort, a participant asked what 'types' of statements were on the cards. This participant clarified that many statements were time-based, and that the emotion-based statement had been unexpected and a source of confusion during the sort. This participant suggested that individuals undertaking the Q sort should be informed of the different types of demand statements prior to undertaking the sort, so that they were mentally prepared. This was noted and the explanation of statement types was presented during the collection phase, as outlined in Chapter 8.

5.6.4 Forced distribution

Through the pilot study it emerged that the forced distribution format did not adequately capture participants' experiences of demands. Participants consistently found it difficult to conform to the forced distribution format. This was particularly the case for those demands in which the participants experienced to 'no extent at all'. The forced distribution format allocated only two statements for '-4' (no extent at all) which was not adequate for many participants. For example, participants who were not currently carers of dependent-aged children usually ranked these statements as '-4' (no extent at all). In these cases, participants expressed anxiety about placing the cards in a forced distribution which did not accurately reflect their experience of demands. Following this feedback, participants were invited to undertake the Q sorting exercise whereby the ranking was unforced and participants were encouraged to place the card along the continuum which best represented their current experience of that demand. Participants agreed that the unforced format was far superior to the forced format as it enabled them to more accurately represent their experience of demands.

Statistically, scatter and distribution of the items are of little importance within the correlational and factor-analytical framework of Q Methodology (Brown, 1980, 1986; Cottle and McKeown, 1981; Mckeown and Thomas, 1988; Watts and Stenner, 2005). This means that the chosen distribution, whether forced or free, "*actually makes no noticeable contribution to the factors which emerge from a particular study*" (Watts and Stenner, 2005, p.77). For this reason, it was decided to use an unforced distribution format in the research.

5.6.5 Ranking continuum

Some participants stated that the negative numbers on the sorting grid caused confusion and that they would find it easier if the negative numbers were removed. Rather rank-ordering the cards from -4 (no extent at all) to +4 (very large extent), it was suggested that this could be replaced with 1 (no extent at all) to 9 (very large extent).

Some participants stated that nine intervals were too many and that it was difficult to differentiate between the various intervals. It was suggested that the intervals be reduced from nine to seven to facilitate differentiation between intervals. In terms of Q studies, the exact configuration of the Q grid will vary between studies, and the actual shape and structure of the distribution curve matters very little since the factors of subjectivity tend to be robust enough to be reproduced under a variety of configurations (Brown, 1971; Watts and Stenner, 2012). Therefore, whether the continuum is -3/+3 or -5/+5 has little effect on the

final results. In addition, it was also suggested that each interval be described so that participants were clear on the meaning ascribed to each interval.

Following this feedback, participants were invited to undertake the Q sorting exercise whereby the ranking was unforced and participants were encouraged to place the card along the continuum ranging from ‘1’ (no extent at all) to ‘7’ (very large extent). Participants agreed that the unforced format with a continuum ranging from ‘1’ (no extent at all), ‘2’ (almost no extent), ‘3’ (slight extent), ‘4’ (some extent), ‘5’ (considerable extent), ‘6’ (large extent) to ‘7’ (very large extent) was easier to use. A sample of the sorting grid is outlined below, in Figure 5-3. All participants agreed that an unforced ranking with a continuum from ‘1’ to ‘7’ facilitated accurate representation of their experience of demands through the statement sorting exercise.

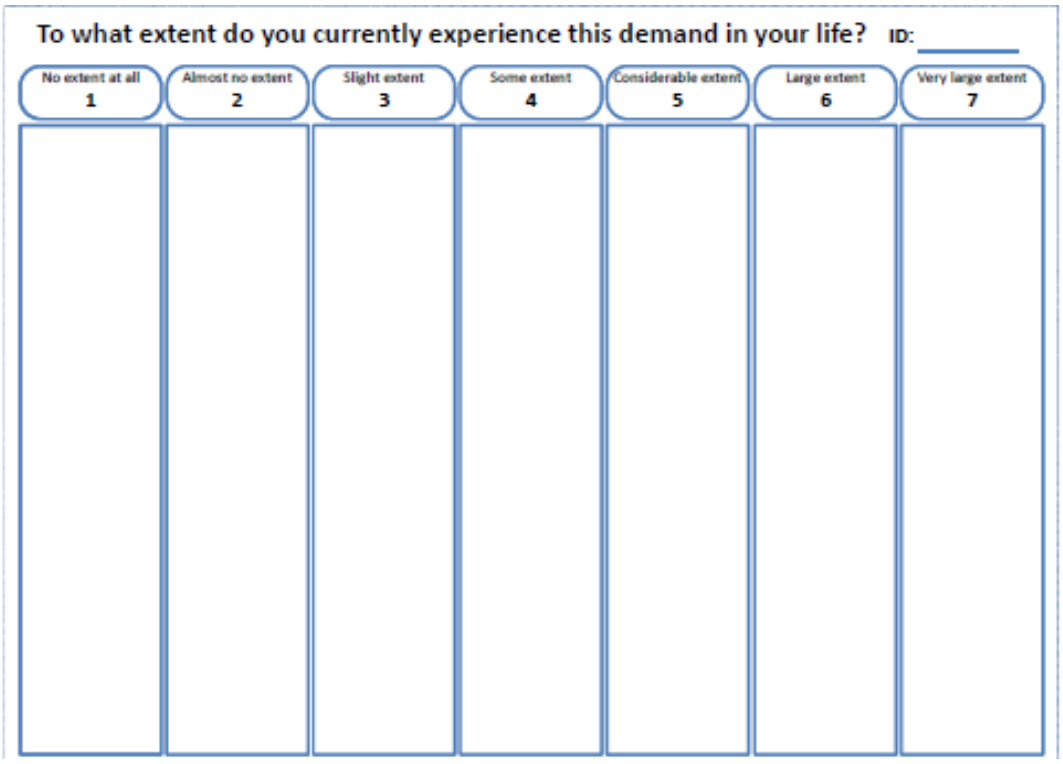

Figure 5-3. Sample of the sorting grid.

5.6.6 Ease of completion

All participants responded positively to the ‘card sorting’ exercise. Respondents appreciated “playing with the cards” and noted that it was an enjoyable departure from surveys and questionnaires. Participants “felt comfortable” ranking the cards in the knowledge that there was no right or wrong answer, and appreciated the opportunity to explore their “current spread” of demands.

5.7 Post hoc test for reliability

It has been contended that a Q sort can be replicated with more than 80% consistency (Brown, 1980, 1993). Nicholas (2011) also found support for reliability via a test-retest case study. Brown (1980, p.289) substantiates this claim of reliability by stating that *"a response is reliable to the extent behavior at some point in time (a) is the same at some later point in time (b) under stable conditions*". A post hoc test was conducted to ascertain the reliability of the Q instrument used in this research, and satisfactory reliability was indicated.

Fifty-nine participants completed a Q sort during the collection phase, as outlined in Chapter 9. In order to test the reliability of the Q instrument, five of the 59 participants repeated the Q sort eight months later. After the Q sort had been completed at time two, a post-sort interview took place. Participants were asked to explain what had changed in their life since the first sort, and this data was used to interpret the results.

Results indicated that of the five participants, two had a test-retest score of more than 80%, and three had a score of less than 80%. Analysis of the interview data revealed that the participants who scored above 80% indicated little to no change in their life since time one. In contrast, participants who scored less than 80% indicated that change had occurred in both their work and family domains since time one. For example, some participants had moved onto a new project with a new project team, while others had relocated house. Results of the post hoc test are summarised in Table 5-10. For those individuals who indicated that changes had occurred since time one, their test-retest score was lower compared with those individuals who stated that little had changed. Results of the post hoc test, therefore, indicate that the Q instrument shows sound reliability.

Table 5-10. Summary of the post-hoc test for reliability.

Participant name (pseudonym)	Test-retest score	Participant comments on changes since Q sort one
Sam	65%	The cranes are no longer onsite and the finishing-off trades and here now. The pressure is different. I take a few Saturdays off now. I will take this Saturday off. Since the first sort I have moved house, and am a lot more relaxed being in the bush.
Cody	95%	Nothing has changed. Same job, same site, same living arrangement.
Callum	71%	During the first sort I was based onsite, and I was on the graduate program. I finished the graduate program at the start of the year. Now I am based in head office, and I am working on a different project. My hours have come down. I am playing footy again.
Anthony	76%	Since the first sort I have moved project and am working on a different site with a different team. I am working more hours too. I have also moved house.
Alex	90%	Nothing much has changed other than moving out of my parents' house. I am now sharing with friends. But same job, same location, same project.

5.8 Summary

This Chapter outlined the development and piloting of the Q instrument. The Q instrument forms one of three data collection techniques utilised in this research. Development of the instrument commenced with the identification and verification of demands. The Q sample selection and sorting procedure were also described. As a result of piloting the Q instrument, a number of important amendments were applied to the Q research instrument. The Chapter ended by describing the process and results of the post hoc test for reliability of the Q instrument. The next Chapter will describe the development and piloting of the resources instrument.

6 Chapter Six: DEVELOPMENT OF THE RESOURCES INSTRUMENT

6.1 Introduction

This research seeks to explore what types of resources workers in the Australian construction industry require in order to help them meet their demands. Three data collection instruments were utilised in the research, which comprise of (i) a questionnaire, (ii) a Q sort of demands, and (iii) a survey of resources. The Q instrument was outlined in Chapter 5 and the questionnaire is outlined in Chapter 7. This chapter will focus on the resources instrument, starting with a description of the method used to identify and verify the resources. Following this, the process of developing and piloting the resources instrument is described. The chapter concludes by outlining what changes were made to the instrument as a result of participant feedback attained through the pilot study.

6.2 Identification of resources

Resources refer to the physical, psychological, organizational or social aspects of a person's work, family or community role that: (a) reduce life demands and the associated physiological costs (such as fatigue and muscle soreness) and psychological costs (such as emotional exhaustion and stress); (b) are functional in achieving life goals; and (c) stimulate personal growth, learning, and development (Schaufeli and Bakker, 2004). A review of the work-life literature was conducted from February to June 2010 to identify resources and their corresponding definitions, as show in Table 6-1. The following databases were searched: Emerald, Proquest, Business Source Premier (EBSCOhost), Expanded Academic (Gale), ISI Web of Science, Science Direct (Elsevier), and the Centre for Work + Life. In addition to the databases, a book search of the library catalogue was also undertaken. Given that resources are being considered within a work-life fit paradigm, the work-life fit literature was reviewed in the first instance using the following key words: fit, work-life fit, work-family fit, work-home-community fit, resources, work resources, family resources, home resources, and community resources. However, given the limited nature of research in the work-fit domain, the review was then extended to include resources in conjunction with work-life enrichment, work-family enrichment, work-life facilitation, work-family facilitation, work-home interaction, and work-home-community interaction.

Table 6-1. Schedule of instrument development steps and timeframes: Literature review.

	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10
Q instrument									
1. Identification of demands via literature review	x	x	X	x	x				
2. Verification of concourse – demands						x	x		
3. Pilot of the Q instrument							x	x	x
Resource instrument									
4. Identification of resources through literature	x	x	X	x	x				
5. Verification of resources						x	x		
6. Pilot of resources instrument							x	x	x
Questionnaire instrument									
7. Questionnaire development			X	x	x	x	x		
8. Pilot of the questionnaire								x	x

Through the identification process, resources were recorded as were the corresponding definitions. In cases where two or more definitions were conflicting or inconsistent, the definition that had been most cited in the literature was recorded. In the instances where no definition was outlined in the literature, a definition was developed. As the definitions were going to be used by workers during a later stage of the research, a decision was made to use plain and simple language. This was particularly critical as the resource descriptors needed to be accessible to all workers irrespective of level of education and literacy (Watts and Stenner, 2012). Furthermore, definitions were written in the second person such that they included the use of ‘you’ and ‘your’. 'You' language helps creates the sense that the writer is talking directly to the reader so that the reader feels engaged and involved (Nazario, Borchers and Lewis, 2010).

The source of the resources generated from the academic literature review is outlined in Appendix 6a.

6.2.1 Work resources

Twenty-five work resources were identified through the academic literature review, as outlined in Table 6-2.

Table 6-2. Work resources identified through the literature.

	Work resource	Description
1	Autonomy	Have the freedom to decide what you do on the job and how the job gets done.
2	Skill utilisation	Learn new things, and use your skills and abilities at work.
3	Income	The money you earn from working.
4	Meaning	Undertake work that is meaningful to you. You perceive your work to be significant and important and has value for others.
5	Pride	Proud of your work participation and achievements.
6	Flexible work hours	Able to choose your start and finish times (within a defined range of hours).
7	Flexible work schedule	Able to choose the days of the week in which your work is conducted.
8	Rostered day off	A day of leave allocated to workers in lieu of accumulated overtime.
9	Telecommuting	Able to work from a location other than your designated work location. For example, working from home.
10	Childcare care benefits	Access to onsite childcare, reimbursed child are or referral to childcare through work.
11	Eldercare benefits	Access to referral to elder care through work.
12	Time off for family	Able to take time off during the day for family reasons, such as picking up a sick child from school.
13	Time off for personal reasons.	Able to take time off during the day for personal reasons, such as a dental appointment.
14	Part time work	Working less than standard full-time hours.
15	Job share	Two or more employees are hired for one job.
16	Compressed work week	Employees work less days per week by working longer hours per day, with no change to income.
17	Supportive work-life culture	Receive support from the organisation to meet family and community demands. This may be through formal organizational policies and benefits.
18	Emotional support from supervisor	Concern, caring, trust and empathy received from your supervisor.
19	Emotional support from co-workers	Concern, caring, trust and empathy received from your co-workers.
20	Feedback / Appraisal support from supervisor	Feedback, evaluation, confirmation or affirmation received from your supervisor.
21	Feedback / Appraisal support from co-workers	Feedback, evaluation, confirmation or affirmation received from your co-workers.
22	Information support from supervisor	Information, advice, suggestions, or directives from your supervisor which assist you to respond to demands.
23	Information support from co-workers	Information, advice, suggestions, or directives from your co-workers which assist you to respond to demands.
24	Instrumental / Practical support from supervisor	Behavior and attitude of your supervisor intended to help you with your day-to-day work activities. For example, time, money, practical help.
25	Instrumental / Practical support from co-workers	Behavior and attitude of co-workers intended to help you with your day-to-day work activities. For example, time, practical help.

6.2.2 Family resources

Twenty-six family resources were identified through the academic literature review, as outlined in Table 6-3.

Table 6-3. Family resources identified through the literature.

	Family resource	Description
1	Family problem solving	Your family has effective problem solving capability to successfully deal with a challenging or unplanned event.
2	Family cohesion	The emotional bonding among your family members.
3	Spouse / partner support for childcare	Support received from husband or wife / partner with caring for your children.
4	Spouse / partner support for eldercare	Support received from husband or wife / partner with caring for or assisting the elderly. The elderly may be aged parents or extended family members who require help or care with everyday living tasks.
5	Spouse / partner emotional support	Concern, caring, trust and empathy received from husband or wife / partner.
6	Spouse / partner appraisal support	Feedback, evaluation, confirmation or affirmation received from your husband or wife / partner supervisor.
7	Spouse / partner information support	Information, advice or suggestions from your husband or wife / partner which assist you to respond to demands.
8	Spouse / partner instrumental support	Behavior and attitude of your husband or wife / partner intended to help you with your day-to-day family activities. For example, time, money, practical help.
9	Relative support for childcare	Extended family / relatives help with caring for your children.
10	Relative support for eldercare	Extended family / relatives help with caring for or assisting the elderly. The elderly may be aged parents or extended family members who require help or care with everyday living tasks.
11	Relative emotional support	Concern, caring, trust and empathy received from extended family / relatives.
12	Relative appraisal support	Feedback, evaluation, confirmation or affirmation received from relatives / extended family.
13	Relative information support	Information, advice or suggestions from your relatives / extended family which assist you to respond to demands.
14	Relative instrumental support	Behavior and attitude of your relatives / extended family intended to help you with your day-to-day family activities. For example, time, money, practical help.
15	Friend support for childcare	Help from friends with caring for your children.
16	Friend support for eldercare	Help from friends with caring for or assisting the elderly. The elderly may be aged parents or extended family members who require help or care with everyday living tasks.
17	Friend emotional support	Concern, caring, trust and empathy received from friends.
18	Friend appraisal support	Feedback, evaluation, confirmation or affirmation received from your friends.
19	Friend information support	Information, advice or suggestions from your friends which assist you to respond to demands.

	Family resource	Description
20	Friend instrumental support	Behavior and attitude of your friends intended to help you with your day-to-day family activities. For example, time, money, practical help.
21	Spouse / partner help with household work and chores	Husband or wife / partner help with house hold work and chores including washing, cleaning, paying bills, gardening, grocery shopping, preparing meals.
22	Relative help with household work and chores	Extended family / relatives help with house hold work and chores including washing, cleaning, paying bills, gardening, grocery shopping, preparing meals.
23	Spouse / partner employment	Husband / wife or partner's employment arranged so that family demands (such as caring for children) can be met. This could mean that employment is part time or allows for flexible work hours.
24	Spouse / partner income	Dual income, in which the income your husband / wife or partner earns enables you to purchase services such as house cleaning / childcare.
25	Meaning	Your family situation is important and significant for you.
26	Pride	You have pride in your family functioning and achievements.

6.2.3 Community resources

Fifteen community resources were identified through the academic literature review, as outlined in Table 6-4.

Table 6-4. Community resources identified through the literature.

	Community resource	Description
1	Flexibility when undertake volunteering activity	Discretion about when the volunteering activity can be done.
2	Child care program	An organized child care program for pre-school aged children.
3	After school program	An organized program for schoolchildren to participate outside of the traditional school day. Some programs are run by a primary or secondary school and some by externally funded non-profit or commercial organizations.
4	School holiday program	An organized program for schoolchildren to participate during school holidays.
5	Purchased services such as house cleaning, gardening.	Purchased services such as house cleaning, gardening, ironing.
6	Health and human service agencies	Formal health and human service agencies which provide professional care.
7	Training and education facilities	Formal training and education facilities, such as TAFE and university, which offer training courses, certificates and degrees.
8	Training and education facilities	Formal training and education facilities, such as TAFE and university, which offer training courses, certificates and degrees. Services may range from cooking classes to
9	Religious institutions emotional support	Concern, caring, trust and empathy received from religious institutions.
10	Religious institutions appraisal support	Feedback, evaluation, confirmation or affirmation received from Religious institutions
11	Religious institutions	Information, advice or suggestions from your Religious institution which

	Community resource	Description
	information support	assists you to respond to demands.
12	Religious institutions instrumental support	Behavior and attitude of your Religious institution Religious institutions intended to help you with your day-to-day family activities. For example, time, money, practical help.
13	Transport	Access to public transport, which may include buses, trains and trams.
14	Meaning	Participation in your community is important and significant for you.
15	Pride	You have pride in your community activities and achievements.

6.3 Participants of the resources verification stage

A panel of workers engaged in the Australian construction industry were invited to participate in an interview to verify resources as identified through the literature review. These participants had also participated in the verification of demands, and their demographic characteristics are outlined in Chapter 5, Section 5.3.

6.4 Verification of resources

An interview was conducted with each participant at their place of employment between July and August 2010, as shown in Table 6-5 as step 5.

Table 6-5. Schedule of instrument development steps and timeframes: Verification.

	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10
Q instrument									
1. Identification of demands via literature review	x	x	x	x	x				
2. Verification of concourse – demands						x	x		
3. Pilot of the Q instrument							x	x	x
Resource instrument									
4. Identification of resources through literature	x	x	x	x	x				
5. Verification of resources						x	x		
6. Pilot of the importance of resources instrument							x	x	x
Questionnaire instrument									
7. Questionnaire development			x	x	x	x	x		
8. Pilot of the questionnaire								x	x

Each interview took approximately 60 - 90 minutes and participant responses were manually recorded by the researcher (interviewer). The following process took place at each interview:

a) The researcher explained the definition of *work* to the participant, as outlined in Chapter 5. It was important that each participant had a consistent understanding of the work domain in preparation for the next step, in which work resources were reviewed.

b) The researcher explained the definition of *work resources* to the participant. Work resources are the physical, psychological, organisational or social aspects of a person's work role that: (a) reduce life demands and the associated physiological costs and psychological costs; (b) are functional in achieving life goals; and c) stimulate personal growth, learning, and development (adapted from Bakker *et al*. 2005).

c) The participant was asked to review each work resource title and corresponding definition provided by the researcher for clarity of meaning. In cases where the meaning was deemed to be unclear, the participant was asked to suggest an alternate meaning. The list of work resources provided to participants is outlined Section 6.2.1.

d) The participant was asked to identify additional work resources which had not been included on the list provided by the researcher. Where an additional work resource was identified, the participant was asked to define this resource.

e) For family resources, steps a) to d) were repeated. The researcher explained the definition of *family* to the participant, as outlined in Chapter 5. The researcher then explained the definition of *family resources* to the participant. Family resources are the physical, psychological, organisational or social aspects of a person's family role that (a) reduce life demands and the associated physiological costs and psychological costs; (b) are functional in achieving life goals; and c) stimulate personal growth, learning, and development (adapted from Bakker *et al*. 2005). The list of family resources provided to participants is outlined Section 6.2.2.

f) For community resources, steps a) to d) were repeated. The researcher explained the definition of *community* to the participant, as outlined in Chapter 5. The researcher then explained the definition of *community* resources to the participant. Community resources are the physical, psychological, organisational or social aspects of a person's community role that (a) reduce life demands and the associated physiological costs and psychological costs; (b) are functional in achieving life goals; and c) stimulate personal growth, learning, and development (adapted from Bakker *et al.* 2005). The list of community resources provided to participants is outlined Section 6.2.3.

6.4.1 Work resources

Through the verification process, some resources were deleted, some were added, and some were refined. For example, 'feedback/appraisal support from supervisor', and 'feedback/appraisal support from co-workers' were deleted, 'employee assistance program'

was added, and ‘telecommuting’ was revised. These changes are outlined in Appendix 6a. Twenty-five work resources formed part of the final set of resources, as outlined in Table 6-6.

Table 6-6. Verified work resources.

	Work resource	Description
WR1.	Autonomy at work	Freedom to decide what you do on the job and how the job gets done.
WR2.	Skill utilization at work	Use your skills and abilities at work.
WR3.	Work-related training and education	Undertake work-related training and education during your paid work time.
WR4.	Income from work	Money you earn from working.
WR5.	Meaning from your work	Undertake work that is meaningful to you. You perceive your work to be significant and important.
WR6.	Pride in your work	Proud of your work participation and achievements.
WR7.	Flexible work hours	Choose your start and finish times.
WR8.	Flexible work schedule	Choose the days of the week in which your work is conducted.
WR9.	Rostered day off	A day of leave allocated to you in lieu of accumulated time worked.
WR10.	Work remotely	Able to work from a location other than your designated work location, such as home, a library or a café. Communication with work is via email or telephone rather than in person.
WR11.	Childcare benefits	Access to onsite childcare, reimbursed childcare, referral to childcare through work, or the ability to bring children to work.
WR12.	Eldercare benefits	Referral to eldercare services through work for your elderly parents.
WR13.	Time off work for family	Able to take time off during the day for family reasons, such as picking up a sick child from school or taking an elderly parent to a medical appointment.
WR14.	Time off work for personal reasons	Able to take time off during the day for personal reasons, such as a dental appointment.
WR15.	Part time work	Your agreed working hours are less than standard full-time hours.
WR16.	Job share	Two or more employees are hired for one job.
WR17.	Compressed work week	Work less days per week by working longer hours per day, with no change to your income.
WR18.	Supportive work-life culture	Support from your organization to meet your non-work demands. This may be through formal organizational policies and benefits.
WR19.	Emotional support from supervisor	Concern, care, trust and empathy from your supervisor to help meet your demands.
WR20.	Emotional support from co-workers	Concern, care, trust and empathy from your co-workers to help meet your demands.
WR21.	Information support from supervisor	Information, advice, suggestions, or directives from your supervisor which assists you to respond to demands.
WR22.	Information support from co-workers	Information, advice, suggestions, or directives from your co-workers which assist you to respond to demands.
WR23.	Practical support from supervisor	Practical support from your supervisor to help you with your day-to-day activities. For example, your supervisor provides you with extra resources to help you get through your allocated tasks.
WR24.	Practical support from co-workers	Practical support from your co-workers to help you with your day-to-day activities. For example, your co-workers help you to complete a task.
WR25.	Employee assistance program	A program offered by your employer which helps you to deal with personal problems. Services include short-term counseling and referral services.

6.4.2 Family resources

Through the verification process, some resources were deleted, some were added, and some were refined. For example, 'relative appraisal support' was deleted, 'time for yourself' was added, and 'partner support for childcare' was modified. These changes are outlined in Appendix 6a. Twenty-six family resources formed part of the final set of resources, as outlined in Table 6-7.

Table 6-7. Verified family resources.

	Family resource	Description
FR1.	Family problem solving	Your family has effective problem solving capability to successfully deal with a challenging or unplanned event.
FR2.	Family cohesion	The emotional bonding among your family members.
FR3.	Parental time-support for care of children	The time allocated by the child's other parent in caring for your children. The other parent may or may not be your current partner.
FR4.	Parental financial-support for care of children	Financial assistance provided by the child's other parent in caring for your children. The other parent may or may not be your current partner.
FR5.	Partner support for eldercare	Help from your partner in caring for or assisting the elderly. The elderly may be aged parents or extended family members who require help or care with everyday living tasks.
FR6.	Partner emotional support	Concern, care, trust and empathy from your partner to help you respond to your demands.
FR7.	Partner information support	Information, advice or suggestions from your partner to help you respond to demands.
FR8.	Partner practical support	Practical support from your partner to help you with your day-to-day activities. Support may be in the form time, money or resources.
FR9.	Relative support for childcare	Help from your extended family with caring for your children.
FR10.	Relative support for eldercare	Help from your extended family in caring for or assisting the elderly. The elderly may be aged parents or extended family members who require help or care with everyday living tasks.
FR11.	Relative emotional support	Concern, care, trust and empathy from your extended family to help you meet your demands.
FR12.	Relative information support	Information, advice or suggestions from your extended family to help you respond to your demands.
FR13.	Relative practical support	Practical support from your extended family to help you with your day-to-day activities. Support may be in the form of time, money or resources.
FR14.	Friend support for childcare	Help from friends with caring for your children.
FR15.	Friend support for eldercare	Help from your friends in caring for or assisting the elderly. The elderly may be aged parents or extended family members who require help or care with everyday living tasks
FR16.	Friend emotional support	Concern, care, trust and empathy from friends to help meet your demands.
FR17.	Friend practical support	Practical support from your friends to help you with your day-to-day activities. Support may be in the form of time, money or resources.
FR18.	In-house help with household work and chores	Help from the people you live with to carry out household work and chores including washing, cleaning, paying bills, gardening, grocery shopping, preparing meals.
FR19.	Relative help with	Help from your extended family with household work and chores including

	Family resource	Description
	household work and chores	washing, cleaning, paying bills, gardening, grocery shopping, preparing meals.
FR20.	Partner employment	Your partner's employment is arranged so that family demands (such as caring for children) can be met. This could mean that your partner works part time or has flexible work hours.
FR21.	Meaning from family	Your family situation is important and significant for you.
FR22.	Pride in family	Pride in your family functioning and achievements.
FR23.	Time with pets	The time you spend with your pet.
FR24.	Friend information support	Information, advice or suggestions from your friends which helps you to respond to your demands.
FR25.	Time for yourself	You have time alone to relax and unwind.
FR26.	Time in physical activities and sports	The time you spend in physical activities and sports. This may include group activities such as tennis, or individual activities such as cycling.

6.4.3 Community resources

Through the verification process, some resources were deleted, some were added, and some were modified. For example, 'religious institutions appraisal support' was deleted, 'self-interest courses' was added, and 'after school program' was modified. These changes are outlined in Appendix 6a. Eighteen community resources formed part of the final set of resources, as shown in Table 6-8.

Table 6-8. Verified community resources.

	Community resource	Description
CR1.	Flexibility when undertaking volunteering activity	Discretion to choose when your volunteering activity can be done.
CR2.	Child care program	Access to an organized child care program for your pre-school aged children. This does not include onsite childcare at work.
CR3.	Before and after school program	Access to an organized program for your school-aged children to participate outside of the traditional school day. Some programs are run by a primary or secondary school and some by other organizations.
CR4.	School holiday program	Access to an organized program for your school-aged children to participate during school holidays.
CR5.	Purchased services such as house cleaning, gardening.	Purchase services such as house cleaning, gardening and ironing.
CR6.	Health, welfare and community services	Access to formal health, welfare and community service agencies which provide professional care for you or the people you care for.
CR7.	Training and education facilities	Access to formal training and education facilities, such as TAFE and university, which offer training courses, certificates and degrees.
CR8.	Self-interest courses	Courses provided by organizations which offer services such as cooking classes, language classes, photography courses.
CR9.	Religious group emotional support	Concern, care, trust and empathy from your religious group to help meet your demands.
CR10.	Religious group	Information, advice or suggestions from your religious group which assists

	Community resource	Description
	information support	you to respond to demands.
CR11.	Religious group practical support	Practical support from your religious group to help you with your day-to-day activities. Support may be in the form of time, money or, resources.
CR12.	Public transport	Access to public transport, such as buses, trains and trams.
CR13.	Community transport	Access to community transport, such as a walking school bus, free-of-charge community bus.
CR14.	Meaning from community	Participation in community activities is important and significant for you.
CR15.	Pride in community	Pride in your community activities and achievements.
CR16.	Community group emotional support	Concern, care, trust and empathy from a community group in which you are a member helps you to meet your demands. For example your local football club, mothers group.
CR17.	Community group information support	Information, advice or suggestions from a community group in which you are a member. This support assists you to respond to demands. For example your local football club, mothers group.
CR18.	Community group practical support	Practical support to help you with your day-to-day activities from a community group in which you are a member. Support may be in the form of time, money or resources. For example your local football club, mothers group.

6.5 Piloting of the resources instrument

The resources instrument was used to explore what types of resources were required by workers to meet their high ranked demands as identified through the Q sort. van Teijlingen and Hundley (2001, p.1) suggest that "*one of the advantages of conducting a pilot study is that it might give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated*". Importantly, a pilot study is used to develop and test the adequacy of research instruments (Baker, 1994; van Teijlingen and Hundley, 2001) and in this research it was considered essential to pilot the resources tool prior to using it in the research. This was particularly critical for two reasons. Firstly, to test how the resource tool instrument functioned. Secondly, to test how the Q sort instrument and resource instrument performed together.

van Teijlingen and Hundley (2001, p4) contend that "*researchers have an ethical obligation to make the best use of their research experience by reporting issues arising from all parts of a study, including the pilot phase*". Based on van Teijlingen and Hundley's (2001) notion, the results of the pilot study are outlined below. The pilot test of the resources instrument occurred from August to October 2010 (step 6), after completion of the identification of resources via the literature review (step 4) and concurrently with the verification of resources (step 5), as highlighted in Table 6-9.

Table 6-9. Schedule of instrument development steps and timeframes: Pilot.

	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10
Q instrument									
1. Identification of demands via literature review	x	x	x	x	x				
2. Verification of concourse – demands						x	x		
3. Pilot of the Q instrument							x	x	x
Resource instrument									
4. Identification of resources through literature	x	x	x	x	x				
5. Verification of resources						x	x		
6. Pilot of resources instrument							x	x	x
Questionnaire instrument									
7. Questionnaire development			x	x	x	x	x		
8. Pilot of the questionnaire								x	x

6.5.1 Participants of the pilot study

Participants of the pilot study were the same group of individuals who participated in the verification of resources. Characteristics of participants are outlined in Section 6.3.

6.5.2 Clarity of meaning of statements

All of the participants of the pilot study had previously participated in the verification process of resources, in which an interview was conducted to review resources for clarity of meaning as well as identification of additional resources. Given that some months had lapsed between the verification process and the pilot study, participants were asked to again consider whether the resources were clear and unambiguous. All participants advised that statements were clear and unambiguous. Subsequently no further changes or amendments were suggested by participants to the statements which formed the suite of resources. Given that there were no changes, the resources presented to participants of the pilot study were utilised in the subsequent research phase.

6.5.3 Sort of resources

In the pilot study, the resources survey took the form of a card sort, which was in keeping with the theme of using cards in the Q sort. The sort of resources was intended to explore what resources were required to assist workers to meet their highly ranked demands as determined through the Q sort. In order to test the instrument, participants were asked to undertake a sort of resources and provide feedback to the researcher. The following steps took place:

a) Participants first completed a Q sort of demands, as this was the context required from which the participants undertook the sort of resources. The process for undertaking the Q sort was described in Chapter 5.
b) Participants were then asked the following question: "*Which resources would be most important in helping you to meet your demands rated 5, 6 and 7*?" with either an 'important' or 'not important' response. Figure 6-1 provides an example of the sorting grid provided to participants of the pilot study.

Important	Not important
Place cards here	Place cards here

Figure 6-1. The resource sorting grid utilised in the pilot study.

c) Participants were then given a set of resources. Each resource was printed onto a card, whereby the code on the top left hand side indicated the domain (w=work, f=family, c=community) along with a unique identifying number. The resource title was printed at the top of the card, and the resource description was printed under the title. Two resource examples which have been printed onto cards are shown in Figure 6-2 below, including '*information support from co-workers'* and '*practical support from supervisor'*. This format of the resource cards was based on the statements used in the Q sort, as outlined in Chapter 5.

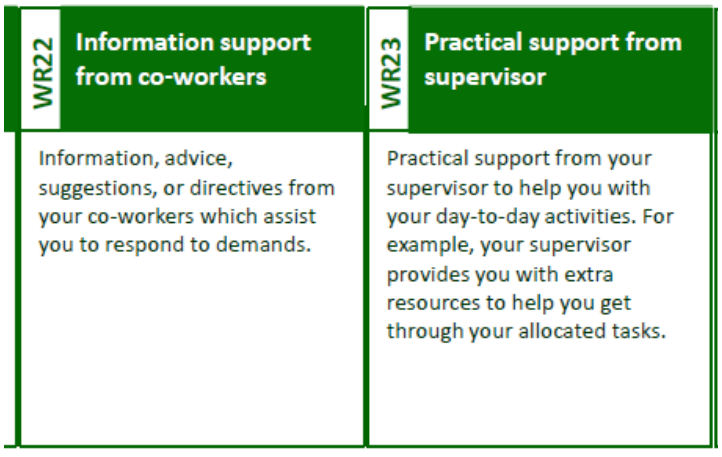

Figure 6-2. Example of resource cards.

6.5.4 Feedback on the question

Two of the participants suggested that the question, "*Which resources would be most important in helping you to meet your demands rated 5, 6 and 7*?" was too general and open

to interpretation. These participants suggested that the question be worded in such a way that was clear and unambiguous. One of the participants suggested that the question be reworded so that when completing the sort of resources, participants would be clear in what context they were responding. The following revision was suggested by a participant: *"In your current role, doing what you are doing now, which resources would be most important in helping you to meet demands rated 5, 6 and 7*?" Feedback was sought from other participants on the rewording and it was agreed that the revised question was clearer than the originally worded question, and therefore would be used in the research.

6.5.5 Feedback on the format of the sorting grid

Three areas of feedback were received regarding the sorting grid:

a) Some participants suggested that the response categories be reversed so that 'not important' was on the left of the grid and 'important' was on the right of the grid, as shown in Figure 6-3.

Not important	Important
Place cards here	Place cards here

Figure 6-3 .Suggested format of the resources sorting grid.

The reason given for this suggestion was that the Q sort grid continuum ranged from 'no extent at all' to 'very large extent' with the negative ranking on the left hand side of the grid and positive ranking on the right side of the grid. Therefore by moving 'not important' to the left of the grid and 'important' to the right on the grid there would be consistency of approach between the Q sort and the importance sort of demands. Upon further discussion with participants it was agreed that this suggested revision would be applied to the instrument.

b) During the sorting exercise, some participants indicated that they had forgotten the original question and needed a reminder midway through the sort. It was therefore suggested that adding the question to the top of the sorting grid would assist participants to stay focused on the question. This suggestion was taken up and the grid was amended to include the question: "*In your current role, doing what you are doing now, which resources would be most important in helping you to meet demands rated 5, 6 and 7*?"

6.5.6 Final version of the sorting grid

Figure 6-4 shows the final version of the resource sorting grid which takes into consideration the feedback received from participants during the pilot study:

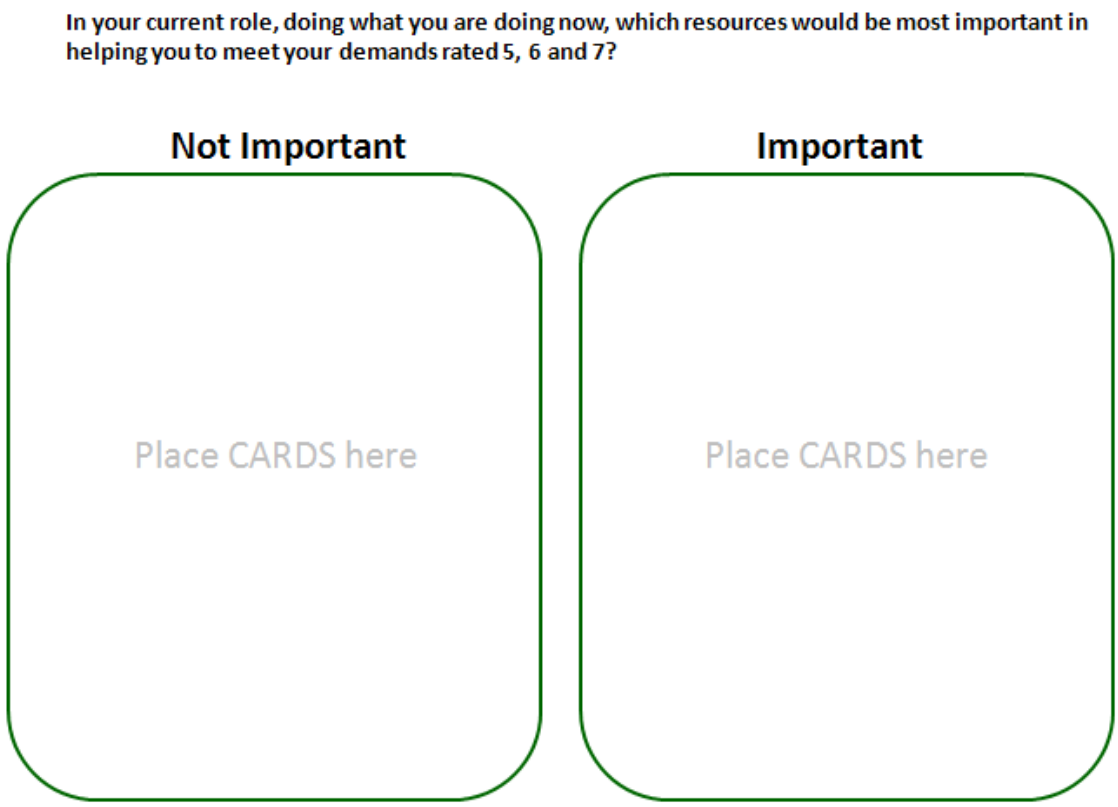

Figure 6-4. Final version of the resources sorting grid.

6.6 Summary

This Chapter described how resources were identified and verified. Following this, the process of developing and piloting the resource instrument were outlined. The Chapter finished by describing participant feedback and determining the final format of the resources instrument which will be used in a subsequent phase of this research.

7 Chapter Seven: DEVELOPMENT OF THE QUESTIONNAIRE

7.1 Introduction

Three data collection instruments were utilised in this research. These included: (i) Q sort; (ii) survey of resources; and (iii) a questionnaire. Development of the Q instrument was described in Chapter 5, and development of the resources instrument was described in Chapter 6. This Chapter will describe the development of the questionnaire instrument which was used in the research. The chapter will start by outlining the contents of the questionnaire. Following this, the piloting of the instrument will be described and revision of items will be outlined.

7.2 Triangulation

Triangulation was applied to this research by investigating the demand and resource experiences of participants from a range of different lenses. Responses from the questionnaire were examined together with the demand and resource data obtained through the Q sort and resource instruments. The questionnaire was designed to provide a greater understanding of the demand and resource experiences of research participants. Further information on triangulation is outlined in Chapter 3.

7.3 Demographic information

By combining questionnaire data with Q Methodology data, characteristics of each 'demands' group was explored to ascertain whether certain viewpoints belonged exclusively to specific groups according to demographic characteristics (Watts and Stenner, 2005). Demographic information requested from participants included age, gender, living arrangement, partner employment status, parental status, and work information. The items and response categories are outlined in Table 7-1.

Table 7-1. Demographic items in questionnaire.

Demographic items	Response categories
Age	Open response
Gender	Male / Female
Living arrangement	(1) live alone; (2) live with my partner; (3) live with my partner and child; (4) live with my children (single parent); (5) live with friends or housemates.

Demographic items	Response categories
Partner employment status	(1) do not have a partner; (2) partner does not work; (3) partner in part time employment; (4) partner in full time employment.
Children less than 18 years of age	(1) no children; (2) one child; (3) two children; (4) three children; (5) four children; (6) more than four children.
Children 18 years of age or older	(1) no children; (2) one child; (3) two children; (4) three children; (5) four children; (6) more than four children.
Work title	Open response
Work location	(1) onsite – in direct construction activity; (2) onsite – but mainly in the site office; (3) head office or regional office; (4) other – please indicate.

7.4 Work demands

Time in paid work (Barnett, 1998; Geurts, Beckers, Taris, Kompier and Smulders, 2009; Boyar *et al*. 2008; Burton and Turrell, 2000; Pittman, 1994; Voydanoff, 2007) and commuting time (Pocock *et al*. 2009; Williams *et al*. 2009; Voydanoff, 2007) have been identified as demands originating in the work domain. Participants were asked to identify hours worked per week and weekly travel time.

7.5 Family demands

Time spent in household chores (Voydanoff, 2007), care duties for a child with a disability (Brennan *et al*. 2007; Voydanoff, 2007), and care duties for an elderly or ailing parent or relative (Pocock *et al*. 2009; Voydanoff, 2007) have been identified as demands originating in the family domain. Items relating to these demands were included in the questionnaire, as outlined below.

7.5.1 Household chores

The question on household chores was adapted from ten Brummelhuis and van der Lippe (2010): *"On average, how many hours a week do you spend undertaking household chores, such as buying groceries, tidying, cleaning, cooking, washing clothes, paying bills, carrying out repairs*?"

7.5.2 Care duties for a child with a disability

The question on care duties for a child with a disability was: "*Do any of your children have special needs due to a disability? Special needs may arise from emotional, intellectual or physical factors*". Five response categories were: (1) I do not have children; (2) My child has no special needs; (3) My child has a low level of special needs; (4) My child has a medium level of special needs; and (5) My child has a high level of special needs.

7.5.3 Care duties for a parents and relatives

The question on care duties for an elderly or ailing parent or relative was: "*Do you have care duties for elderly or ailing parents or relatives?*" Five response categories were: (1) I do not have elderly or ailing parents or relatives; (2) I have no care duties; (3) I have a low level of care duties; (4) I have a medium level of care duties; and (5) I have a high level of care duties.

7.5.4 Responsibility for other people

A general question was asked about responsibility for other people, which was taken from Rothausen (1999): "*Considering everything, how much responsibility for other people (outside of the workplace) do you have*?" Five response categories were: (1) I have little or no responsibility for other people; (2) I have a below-average amount of responsibility for other people; (3) I have an average-amount of responsibility for other people; (4) I have an above-average amount of responsibility for other people; and (5) I have an exceptional amount of responsibility for other people.

7.6 Family resources

Help with household chores (Wayne, Randel and Stevens, 2006), help with childcare duties (Aycan and Eskin, 2005; Voydanoff, 2007) and help with parent or relative care duties (Voydanoff, 2007) have been identified as resources originating in the family domain. Items relating to these resources were included in the questionnaire, as outlined below.

7.6.1 Help with household chores

The question on help with household chores was: "*How much help do you receive with household chores? Chores may include buying groceries, tidying, cleaning, cooking, washing clothes, paying bills, carrying out repairs*". Seven response categories were: (1) I receive no help at all; (2) I almost never receive help; (3) I seldom receive help; (4) I sometimes receive

help; (5) I frequently receive help; (6) I receive help almost all the time; and (7) I receive help all the time.

7.6.2 Help with childcare

The question on help with childcare duties was: "*Do you receive help with childcare duties? Consider family, friends, purchased help*". Eight response categories were: (1) I do not have children; (2) I receive no help at all; (3) I almost never receive help; (4) I seldom receive help; (5) I sometimes receive help; (6) I frequently receive help; (7) I receive help almost all the time; and (8) I receive help all the time.

7.6.3 Level of help with childcare

The question on how much help received with childcare was: "*How much help do you receive with childcare duties? Consider family, friends, purchased help*". Eight response categories were: (1) I do not have children; (2) I receive no help; (3) I receive 1–5 hours of help per week; (4) I receive 6–10 hours of help per week; (5) I receive 11–20 hours of help per week; (6) I receive 21–30 hours of help per week; (7) I receive 31-40 hours of help per week; and (8) I receive more than 40 hours of help per week.

7.6.4 Help with parent and relative care

The question on help with parent or relative care duties was: "*Do you receive help with parent or relative care duties? Consider family, friends, purchased help*." Eight response categories were: (1) I do not have elderly or ailing parents or relatives; (2) I receive no help at all; (3) I almost never receive help; (4) I seldom receive help; (5) I sometimes receive help; (6) I frequently receive help; (7) I receive help almost all the time; and (8) I receive help all the time.

7.6.5 Level of help with parent and relative care

The question on amount of help with parent or relative care duties was: "*How much help do you receive with parent or relative care duties? Consider family, friends, purchased help*". Eight response categories were (1) I do not have elderly or ailing parents or relatives; (2) I receive no help; (3) I receive 1–5 hours of help per week; (4) I receive 6–10 hours of help per week; (5) I receive 11–20 hours of help per week; (6) I receive 21–30 hours of help per week; (7) I receive 31-40 hours of help per week; and (8) I receive more than 40 hours of help per week.

7.7 Segmentation preferences

It has been proposed that individual's segmentation preferences will impact upon their preference for and use of resources (Rothbard *et al.* 2005; Shockley and Allen, 2010), therefore a measure of segmentation was included in the questionnaire. Segmentation is referred to as "*the degree to which work and family are separated or insulated from one another*" (Edwards and Rothbard, 1999, p. 95). Segmentation results from active efforts of the person to manage the boundary between work and family. Kreiner (2006, p.486) refers to a person's desire to separate work and home domains as "*preferences for work-home segmentation*". Segmentation preferences were measured by Kreiner's (2006) scale. Kreiner's (2006) scale used four items to measure segmentation preferences, and has reported high internal consistency (α=0.91). Kreiner's (2006) segmentation preferences scale has been replicated in other studies and reported high internal consistency (for example, Chen *et al.* 2009; Shockley and Allen, 2010). A sample item is "*I prefer to keep work life at work*". Participants were asked to indicate the extent to which they agree with each item using a 7-point scale (1=strongly disagree, 7=strongly agree).

7.8 Role salience

It is proposed that the salience attributed to a role has a direct impact upon the resources utilised by individuals in that role (Bagger *et al*. 2008). Therefore measures of work, family and community role salience were included in the questionnaire, as outlined below.

7.8.1 Work role salience

Work role salience was measured by Barnett, Eddleston and Kellermanns' (2009) four item scale, with internal consistency reported as α=0.71. Barnett *et al*. (2009) utilised three items from Lodahl and Kejner's Job Involvement Scale (1965). The three items utilised were reported by Reeve and Smith (2001) as having adequate construct validity. One item from Lobel and St. Clair (1992) was also included in the scale. A sample item is "*A major source of satisfaction in my life is my work*". Participants are asked to indicate the extent to which they agree with each item using a 7-point scale (1=strongly disagree, 7=strongly agree). The items in Barnett *et al's* (2009) scale used the term "career", however this term was substituted with "work" for two important reasons. Firstly, the use of work is consistent with the language used in the other data collection methods such as the Q sort. Secondly, the use of work is more broadly applicable to all workers irrespective of position, occupation, or level of seniority whereas career may be perceived to relate to professional workers only.

7.8.2 Family role salience

Family role salience was measured by Barnett *et al's* (2009) four item scale as outlined in the previous section, with internal consistency reported as α=0.89. A sample item is "*A major source of satisfaction in my life is my family*". Participants were asked to indicate the extent to which they agree with each item using a 7-point scale (1=strongly disagree, 7=strongly agree).

7.8.3 Community role salience

Community role salience was assessed with the same four items as family role salience, with the word 'family' substituted for 'community'. A sample item is "*A major source of satisfaction in my life is my community*". Participants are asked to indicate the extent to which they agree with each item using a 7-point scale (1=strongly disagree, 7=strongly agree).

7.8.4 Role importance

Subjective role importance was measured by adapting Whitley and England's (1977) centrality measure, as applied by Carlson and Kacmar (2000) in their investigation of how central work and family are to an individual's life, relative to other life roles. Carlson and Kacmar (2000) asked study participants to distribute 100 points into five categories (i.e., leisure, community, work, religion, and family) representing their life at the present time. In this research, participants were asked to distribute 100 points into three categories (family, work, and community) according to importance in their life at the present time. This subjective measure of role importance was included in the questionnaire as a basis from which triangulation could occur with the objective measure of work, family and community salience measures outlined in Section 7.8.1, 7.8.2 and 7.8.3.

7.9 Time allocated to roles

Time allocated to roles was measured by asking participants to distribute 100 points into three categories (family, work, and community) according to how time is allocated in their life at the present time. This measure has not been previously used. From an exploratory context, it was considered worthwhile to contrast role importance with time allocated to roles, as research has indicated that an individual will allocate more time and energy to the most important role (Cinamon, 2010).

7.10 Additional issues

Participants were invited to note additional issues relating to work-life interaction in a space allocated for this purpose.

7.11 Piloting the questionnaire instrument

The questionnaire was piloted, and the following section outlines participants of the pilot study and findings of the pilot study.

7.11.1 Participants of the pilot study

A subset of the panel of individuals who participated in the Q and resource instrument pilot studies were invited to participate in the piloting of the questionnaire. The panel of workers were chosen on the basis that their organization had expressed interest in participating in the research, and subsequently they had volunteered to review the questionnaire. Of the five participants, three were male and two were female. Two participants were aged 21 – 30, one was 31 – 40 and two were 51 – 60. Occupations ranged from senior manager, human resources manager, quality and safety coordinator, health and safety coordinator, and graduate project engineer. Four of the five participants were partnered, two had no children, one had children under 18, and two had children over 18. Three of the participants lived with their partner, one lived with friends, and one lived with their parents. Four participants worked on a full time basis, and one worked on a part time basis. Table 7-2 outlines the demographic characteristics of participants. The pilot exercise occurred between October and November 2010. Each session took approximately half an hour.

Table 7-2. Demographic characteristics of participants of the pilot study.

Participant	Gender	Age category	Occupation	Relationship status	Parental status	Living arrangement
1	Male	51 - 60	Senior Manager	Married	Children over 18	Live with wife and child with a disability
2	Male	51 - 60	Human Resources Manager	Married	Children over 18	Live with wife
3	Female	31 - 40	Quality and Safety Coordinator (part time)	Married	Two children under 18	Live with husband and children
4	Female	21 - 30	Health and Safety Coordinator	Partner	No children	Live with friends
5	Male	21 - 30	Graduate Project Engineer	Single	No children	Live with parents

7.11.2 Pilot study feedback

Each participant was asked to undertake the questionnaire. Whilst undertaking the questionnaire, participants were asked to consider (i) clarity of meaning of questions; (ii) clarity of meaning of response categories. All participants indicated that the wording of the questions and response categories were clear and unambiguous.

Living arrangement

One of the participants suggested that an additional response category be added to the question related to living arrangement. This participant lived with his parents, however there was not a category which adequately captured his response. Based on this feedback, '*live with my parents*' was added as a category response to the question relating to living arrangements.

Type of pay

It has been suggested that the way in which salaried and waged workers' job are structured may have an impact on the demands and resources they experience. For example, Lingard *et al*. (2008, p.22) found that "*the needs and expectations between waged and salaried staff were at odds…..waged workers prefer to work longer hours for which they are paid overtime, while salaried employees prefer to complete their work in the shortest amount of time*". One of the participants suggested that it may be useful to add a question relating to workers' type of pay. This was based on the notion that, although a question on work location was included in the questionnaire, information on type of pay may enable a finer grained analysis of findings and interpretation of results. Based on this feedback, a question on type of pay was added to the questionnaire. The two categories of type of pay were: (1) salary – same pay each week irrespective of the hours you work beyond your standard hours; and (2) wage – paid for standard hours plus additional hours worked above your standard hours

7.12 Final version of the questionnaire

The final version of the questionnaire incorporated feedback from participants in relation to living arrangement and type of pay. A copy of the questionnaire is included in Appendix 7a.

7.13 Summary

This chapter outlined the content of the questionnaire, including question and response categories. The process and results of the pilot phase were outlined, and changes made to the questionnaire as a result of participant feedback were described. The next Chapter describes the methods applied in the research.

8 Chapter Eight: METHODS AND PROCEDURE

8.1 Introduction

This Chapter outlines the methods and procedure applied to the research. The Chapter will begin by outlining the sampling method utilised, describe the participating organizations, and outline when and where data collection was undertaken. The Chapter will then go on to explain how each of the three instruments were administered. Following this, the data analysis methods will be described.

8.2 Sampling method

Purposive sampling refers to a method of "*selecting participants because they have particular features or characteristics that will enable detailed exploration of the phenomena being studied*" (Frost, 2011, p.195). Creswell (2009, p.178) extends this definition beyond participants to include purposefully selected sites. Within Q Methodology, the P set (participants) is a structured sample of respondents who are theoretically relevant to the topic under consideration. The purposive sampling method is applied as respondents are chosen because of their relevance to the goals of the study (McKeown and Thomas, 1988), and are strategically sampled in order to ensure that a wide selection of viewpoints are represented in relation to the given topic under investigation (Brown, 1980; Stenner *et al.* 2008; Watts and Stenner, 2005). In the case where a Q study seeks to investigate particular concepts, respondents may not 'group together' according to demographic characteristics. Watts and Stenner (2005, p.80) therefore contend that "*it is better to avoid too many assumptions a priori, particularly where these assumptions are based on preconceived demographic notions*". Given that this research sought to explore workers' experience of demands and resources in the Australian construction industry, it was anticipated that the sample originating from an Australian construction organization should include a mix of gender, age, work location (head office, site office, direct construction activity), type of pay (waged and salaried), parents with and without dependent-aged children, and partnered and single workers.

8.3 Sample size

As outlined in Chapter 4, studies which apply Q Methodology typically comprise a maximum of 60 participants (Brown, 1986; Stenner *et al*. 2008; Watts and Stenner, 2005). Based on the principles of Q Methodology, the research sought to include a maximum of 60 workers from the Australian construction industry.

8.4 Participating organizations

8.4.1 Organization one

Organization one is a medium sized contract-based construction organization based in Australia. The head office of the organization is located in the city of Melbourne and both large-scale commercial and residential projects are undertaken across the country. An initial meeting was held with the organization on 20 September 2010 to introduce the research and investigate the organization's interest in supporting its workers to participate in the research. At that meeting, the organization indicated its agreement to participate in the research. A subsequent meeting was conducted with the organization in November 2010 to introduce the data collection procedure, as well as address ethical considerations such as informed consent, voluntary participation, and confidentiality.

On 15 November 2010, an internal memorandum was circulated to staff based in the state of Victoria, Australia, of which Melbourne is the capital city. The memorandum introduced the research and invited workers to (i) complete a questionnaire, (ii) undertake a Q sort and post sort interview, and (iii) undertake a resources sort and post sort interview. Out of the 169 workers employed in Victoria by the organization at that time, 34 workers took part in the research. Approval was requested from two project managers to conduct data collection sessions at their sites in order to increase participation rates. Unfortunately this was not possible due to a peak of activity at both sites in which workers could not be released to participate in the session.

8.4.2 Organization two

Organization two is a medium sized contract-based construction organization based in Australia. The head office of the organization is located in Melbourne and both large-scale commercial and residential projects are undertaken across the country. Initial contact was made with the organization in June 2011. At this contact, the organization indicated interest in supporting the research, however endorsement was required by the Senior Leadership Team and the Managing Director. On 25 June 2011, endorsement was received for the organization's participation in the research. A subsequent meeting was conducted with the organization on 30 June 2011 to introduce the data collection procedure, as well as address ethical considerations such as informed consent, voluntary participation and confidentiality. At this meeting, the organization sought clarification on how many participants were required for the research, and stated that they would release the minimum number as requested by the researcher. Given that 34 Q sorts had been completed by organization one, a further 26 Q sorts were required to take the participant numbers up to 60. Regarding number of participants, organization two agreed to release 25 workers to participate in the research.

During July 2011, the Leadership Team was asked to brief their own teams and invite workers to voluntarily participate. A total of 25 workers participated in the research.

8.5 Collection schedule

The researcher requested that where possible research participants should as diverse as possible in terms of gender, age, work location (head office, site office, direct construction activity), type of pay (waged and salaried), parents with and without dependent-aged children; partnered and single. In response, the participating organizations provided access to both head office and construction project sites.

8.5.1 Organization one

Six data collection sessions occurred between 7 December 2010 and 11 March 2011 across two locations. Sessions were conducted at: (i) head office; and (ii) project 'A'. Project 'A' had an estimated budget of $190 million with completion due in October 2011. The project consisted of two retail levels plus 2,700 car spaces.

8.5.1.1 Schedule of data collection sessions

Four data collection sessions were conducted at Head Office, and two sessions were conducted at Project 'A'. Date, location and number of sorts is summarised below in Table 8-1. A description of the participant sample is described in Chapter 9.

Table 8-1. Schedule of data collection sessions at Organization one.

	Date	Location	Number of sorts
1	7 December 2010	Head Office	3
2	9 December 2010	Head Office	4
3	14 December 2010	Head Office	3
4	8 March 2011	Project 'A'	10
5	10 March 2011	Head Office	7
6	11 March 2011	Project 'A'	7
		TOTAL	34

8.5.2 Organization two

Seven data collection sessions were conducted between and 6 July and 21 September 2011 across four sites including: (i) Head Office; (ii) Project 'A'; (iii) Project 'B'; and (iv) Project 'C'. A brief overview of each of the sites follows:

Head Office: Senior management, corporate and support services, and construction-related personnel such as estimators, engineers and contract managers are based at Head Office.
Project 'A': $30.9 million development comprised of a 13 level tower of 137 apartments above a basement car park.
Project 'B': $62 million residential development comprised of 17 levels.
Project 'C': $104 million development comprised of a 36 storey, 575 residential apartment tower.

8.5.2.1 Schedule of data collection sessions

One data collection session was conducted at Head Office, and two at each of the projects. Date, location and number of sorts is summarised below in Table 8-2. A description of the participant sample is described in Chapter 9.

Table 8-2. **Schedule of data collection sessions at Organization two.**

	Date	Location	Number of sorts
1	6 July 2011	Head Office	4
2	1 August 2011	Project 'A'	4
3	2 August 2011	Project 'B'	4
4	4 August 2011	Project 'C'	4
5	23 August 2011	Project 'C'	3
6	25 August 2011	Project 'A'	3
7	21 September 2011	Project 'B'	3
		TOTAL	25

8.6 Research instruments

Three instruments were utilised in the research. These included a Q sort (outlined in Chapter 5), a survey of resources (outlined in Chapter 6), and a questionnaire (outlined in Chapter 7). Organization two requested that one item be removed from the questionnaire which related to participant's current work role. It was considered that confidentiality may be jeopardised if work role was indicated, specifically in cases where a role was unique and not duplicated across the organization. It was agreed that this question would be removed from the questionnaire. As a consequence, interpretation of results excluded participants' work role.

8.7 Procedure

Prior to participation in the research, participants were provided with: (i) a project information statement which outlined information about the research; and (ii) a blank questionnaire. As

completion of the questionnaire was entirely voluntary, consent was implied through the return of the questionnaire, and therefore a consent form was not administered at that stage of the research. As outlined below, informed consent was sought from participants prior to participation in the Q sort and resources survey. A copy of the project information statement and consent form are included in Appendix 8a and 8b.

8.7.1 Questionnaire

Participants were asked to read the project information statement, and if they were willing to participate they were asked to then complete the questionnaire and bring it along to the 'card sorting' exercise which comprised of the Q sort and the resources sort.

8.7.2 Q sort

Administration of the Q sort occurred at participants' place of work. Each session was conducted in a private office. Following are the complete set of procedures that were replicated at each session.

a) The researcher asked the participant if they had read the project information statement and whether they had any questions about the research. In cases where the participant had not reviewed the project information statement, a statement was provided to the participant and time was allowed so that the participant could review the document and ask any questions.
b) Following review of the project information statement, participants were asked to sign a consent form regarding participation in the research. The consent form included participation in: (i) the Q sort and post-sort interview; and (ii) the survey of resources and post-sort interview.
c) Next, the researcher asked whether the participant had completed the questionnaire. In cases where the participant had not completed a questionnaire, a blank questionnaire was provided to the participant and time was allowed so that the participant could complete the questionnaire.
d) The researcher then commenced administration of the Q sort. The researcher firstly provided the participant with a brief explanation of demands: "*We can experience a range of demands. These may come from work, our family or home life, or our community. Some demands may be positive for us and some may be negative. For example, caring for our children might be a demand we enjoy, while doing the housework might be demand we don't enjoy. The one thing demands have in common is that they take up our time and energy*".
e) The researcher then gave the set of demand cards to the participant and explained: "*These cards include different kinds of demands. First we start with work demands, then*

we move on to family demands, and then we finish with community demands. There are different types of demands in the pack, such as time-based demands and emotional-based demands".

f) Participants were then reminded that there were no right or wrong answers: "*Before we start, can I remind you that this is not a test. There is no right or wrong answer, and results are completely confidential*".

g) The ranking grid was then set up on the table in front of the participant.

h) The participant's attention was then referred to the ranking grid and they were advised: "*As you go through each demand, consider to what extent you currently experience this demand in your life now. For example take the first card (that you have in your hand). If you experience this demand to a large extent you would put it up this end (the right side) of the grid. If it's currently a small demand you would put it down this end (the left side) of the grid. I will sit here quietly while you sort the cards. Please take your time. If you have any questions as you go through the cards please ask. Before you get started do you have any questions?*"

i) During the sort, the researcher stayed quietly in the room and was on hand to answer any questions as they arose. Furthermore, if the participant commented on a demand these were noted by the researcher.

j) Upon completion of the Q sort, participants were asked the post-sort questions:
   - how the participant interpreted the demands given especially high or low rankings in their Q sort, and what implications those demands have in the context of their overall experience;
   - additional demands they experience, which were not included in the set of demands provided by the researcher; and
   - any further comments about the demands.

k) The researcher left the demands ranked as 5, 6 and 7 on the ranking grid, and removed the other cards which were put into envelopes for recording at a later time.

8.7.3 Resource survey

a) The researcher gave the set of resource cards to the participant and explained: "*Resources can help us meet our demands. Resources can take various shapes and forms and can come from work, family or our community. Like the set of demand cards, first we start with work resources, then we move on to family resources, and then we finish with community resources. There are different types of resources in the pack, such as time-based resources and emotional-based resources*".

b) The resources mat was then set up on the table in front of the participant.

c) The participant's attention was then referred to the mat and they were advised: "*As you go through each resource, consider your current role. Doing what you are doing now, which resources would be most important in helping you to meet you demands ranked 5, 6 and 7*". At this stage, the participant was then referred back to the demands grid and to the demands which they had ranked as 5, 6 and 7.

d) In relation to the sorting, participants were advised: "*You may come across a resource which you don't currently have, but would be important in helping you to meet your demands ranked as 5, 6 and 7. In these cases you should put this card on the 'important' pile. I will sit here quietly while you sort the cards. If you have any questions as you go through the resources please ask. Before you get started do you have any questions?"*

e) During the sort, the researcher stayed quietly in the room and was on hand to answer any questions as they arose. Furthermore if the participant commented on the resources or resource rankings these were noted by the researcher.

f) Upon completion of the sort, participants were asked the post sort questions:
   - any additional resources which would assist to meet the demands they experience, which were not included in the set of resources provided by the researcher; and
   - any further comments about the resources.

g) Upon completion of the questions, the participant was thanked and invited to contact the researcher if they had questions arising from the research.

8.8 Data recording

8.8.1 Questionnaire

After completion, each questionnaire was given a unique identifier. In order to match all three research instruments to the one participant, thereafter the Q sort and resources data was allocated with the same unique identifier as the questionnaire.

8.8.2 Q sort

Once the Q sort had been completed, cards were put into seven marked envelopes. For example, the first envelope was marked as '1', and demands ranked as '1' were placed inside this envelope. Placing cards in envelopes was done prior to the commencement of the next session so as to ensure that the participant's confidentiality was upheld, and that the next participant did not view the prior participant's sort.

Participant rankings were recorded using a matrix, with a sample of the recording matrix shown below in Table 8-3 (the full recording matrix is attached as Appendix 8c). To address potential recording errors, the following procedure was followed:

a) Each demand (statement) in envelope ‘1’ was recorded onto the demands recording matrix in the column marked ‘1’ by using a mark (-).
b) Once all statements had been marked on the matrix, the marks in column 1 were summed.
c) The statements from the envelope were then counted to ensure that the total number of statements from the envelope matched the sum of marks (-) in the corresponding column.
d) Steps a), b) and c) and were repeated for all envelopes marked one through to seven.
e) All of the column totals were then summed to ensure that a total of 43 statements were recorded.
f) A check was then made to ensure that each demand had a mark against it. For example, ‘time in paid work’ (WD1) was checked, followed by ‘commuting time’ (WD2).
g) After the recording process was completed, the data was ready for entry in to PQMethod (software program).

Table 8-3. Example of the demands recording matrix.

DEMAND	No.	1	2	3	4	5	6	7	No.
Time in paid work	WD1							-	WD1
Commuting time	WD2					-			WD2
Non-standard work schedule	WD3					-			WD3
Work over-load	WD4				-				WD4
Over time hours	WD5			-					WD5
Job insecurity	WD6			-					WD6
Overnight travel for work	WD7	-							WD7
Work activities at home	WD8			-					WD8
Emotional strain at work	WD9						-		WD9

8.8.3 Survey of resources

Once the sort of resources had been completed, cards were put into two marked envelopes. Resources sorted as ‘not important’ were put into an envelope marked ‘not important’ and resources sorted as ‘important’ were put into the envelope marked ‘important’. Placing cards in envelopes was done prior to the commencement of the next session so as to ensure that the participant’s confidentiality was upheld, and that the next participant did not view the prior participants sort. After the session had been completed, the researcher then recorded participant sorts using a matrix, with a sample of the recording matrix shown below in Table 8-4 (the full recording matrix is attached as Appendix 8d). To address potential recording errors, the following procedure was followed:

a) Each resource in the envelope marked as ‘important’ was recorded onto the resources marked ‘important’ by using a mark (-).
b) Each resource in the envelope marked as ‘not important’ was recorded onto the resources marked ‘not important’ by using a mark (-).

c) A check was then made to ensure that each resource had a mark against it. For example, 'autonomy at work' (WR1) was checked, followed by 'skill utilization at work' (WR2). This check occurred for all resources.
d) After the recording process was completed, the data were ready for entry in to Microsoft Excel (version 2010).

Table 8-4. Example of the resources recording matrix.

RESOURCE	No.	IMPORTANT	NOT IMPORTANT
Autonomy at work	WR1	-	
Skill utilization at work	WR2	-	
Work-related training and education	WR3	-	
Income from work	WR4		-
Meaning from your work	WR5		-
Pride in your work	WR6	-	
Flexible work hours	WR7	-	
Flexible work schedule	WR8		-
Rostered day off	WR9		-

8.9 Data analysis

8.9.1 Q sort

The Q sorts were analysed using a dedicated Q Methodological package. The dedicated software package facilitates the appropriate analyses to be conducted (Watts and Stenner, 2005, 2012). Several packages are available including PCQ for Windows which is a commercial product available for a fee (Stricklin and Almeida, 2001), and PQMethod which is available as a free download from the internet. Dedicated packages are recommended as they "*facilitate data input, automatically generate the initial by-person correlation matrix, and make processes of factor extraction, rotation and estimation very straightforward*" (Watts and Stenner, 2005, p.80). Data collected from the Q sorts were analysed by using PQMethod (version 2.11). PQMethod is used extensively by researchers undertaking Q studies. Analysis proceeded according to the steps outlined in the PQMethod Manual (Schmolck, 2002). Steps undertaken in the analysis are included in Appendix 8e.

8.9.2 Survey of resources

Following the identification of factor groups, the resource data of each factor group was entered into Microsoft Excel (version 2010). The frequency of participants who indicated that a resource was important was calculated. For example, if factor group one was made up of ten participants who all indicated that a given resource was considered important, the

frequency would be 100%. If another resource was considered important by five of the ten participants, the frequency would be 50%. This frequency calculation identified how participants of a given factor group perceived the suite of resources and their importance in relation to meeting demands experienced as high.

8.9.3 Post Q sort and resource survey interview data

Qualitative data collected during the post-Q sort interview and resources survey was entered into MS Word, and then cross referenced with emergent groups. Thematic analysis was conducted on the data. Thematic analysis "*is a process for encoding qualitative information….a theme is a pattern found in the information that at the minimum describes and organizes possible observations or at the maximum interprets aspects of the phenomenon*" (Boyatzis, 1998, p.vi-vii).

8.9.4 Questionnaire

8.9.4.1 Demographic information

Using SPSS (version 19), mean and standard deviation were calculated for age, while frequencies were calculated for gender, living arrangement, and partner's employment status.

8.9.4.2 Work information

Using SPSS (version 19), mean and standard deviation were calculated for hours worked per week and travel time, while frequencies were calculated for type of pay and work location.

A one-way between groups analysis of variance (ANOVA) was conducted to explore hours worked per week and travel time between emergent groups.

8.9.4.3 Information about household duties

Using SPSS (version 19), mean and standard deviation were calculated for number of hours spent undertaking household chores, while frequencies were calculated for amount of help received with household chores. One-way between groups ANOVA was conducted to explore time spent on household chores hours between emergent groups.

8.9.4.4 Information of care responsibilities

Using SPSS (version 19), frequencies were calculated for parental status, number of children under 18, number of children 18 years and older, amount of help received with childcare duties, children with special needs due to a disability, and care duties for elderly or ailing parents or relatives.

A general question was asked about responsibility for other people, which was taken from Rothausen (1999) and worded as: "*Considering everything, how much responsibility for other people (outside of the workplace) do you have?"* Using SPSS (version 19), mean and standard deviation were calculated. One-way between groups ANOVA was conducted to explore significant differences between emergent groups.

8.9.4.5 Segmentation preferences

Segmentation preferences were measured by Kreiner's (2006) four item scale. Prior to analysis, the Cronbach's alpha coefficient was calculated to ascertain the internal consistency reliability. Pending acceptable internal consistency reliability of the subscale, mean and standard deviation scores were calculated, as well as one-way between groups ANOVA, using SPSS (version 19).

8.9.4.6 Role salience

Given that the community role salience scale had not been utilised in previous studies, it was considered important to ascertain whether the scale differentiated from work and family role salience scales. Data collected on the role salience scale was factor analysed using principal component analysis with varimax rotation, using SPSS (version 19). Prior to factor analysis, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO), Bartlett's Test of Sphericity, and the correlation matrix scores were reviewed so as to ascertain whether the dataset was suitable for factor analysis (Pallant, 2007). Prior to further analysis, Cronbach's alpha coefficient was calculated for all items which loaded onto a factor to ascertain the internal consistency reliability. Pending acceptable internal consistency reliability of the factors, mean and standard deviation scores, and one-way between groups ANOVA were calculated using SPSS (version 19).

8.9.4.7 Role importance

Using SPSS (version 19), mean scores were calculated for each of the emergent groups for family, work and community role categories. One-way between groups ANOVA was also calculated.

8.9.4.8 Time allocated to roles

Using SPSS (version 19), the mean score and standard deviation for each the emergent groups was calculated for family, work and community role categories. One-way between groups ANOVA was also calculated.

8.10 Summary

This Chapter described the two organizations which participated in the research, outlined the process by which the research instruments were administered, and the method by which the data were analysed. The following Chapter will describe the results of the research.

9 Chapter Nine: RESULTS

9.1 Introduction

This Chapter will present the findings of the study. The analysis phase can be represented as three distinct stages and is pictorially illustrated in Figure 9-1 below. As shown in Figure 9-1, the three stages are interdependent, as the output of stage one is used to inform stage two and stage three. The Chapter will start with a description of the sample, followed by the results of the factor analysis of Q sorts which identify the demand groups. Following identification of the demand groups, the findings of each group will be reported according to a description of the demographic characteristics, care duties, role importance and segmentation preferences, demands experienced by members of the group, and resources required to meet high-ranked demands.

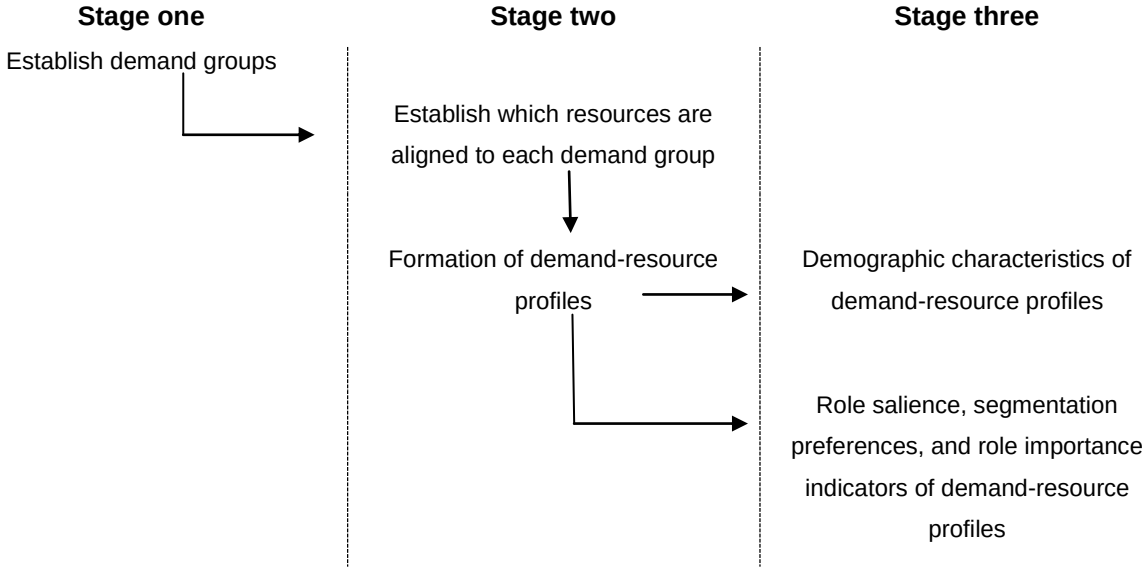

Figure 9-1. Outputs of the three analysis stages.

9.2 Sample

Given that the research sought to explore workers' experience of demands in the Australian construction industry, the data from organization one and two were combined in order to broaden the sample. Given its exploratory nature, it was considered beneficial to include a broad mix of gender, age, work location (head office, site office, direct construction activity), type of pay (waged and salaried), parents with and without dependent-aged children, and partnered and single workers. Furthermore, the unit of analysis was at the individual level rather than at the organizational level, therefore combining the data sets was warranted. The data was collected from construction organisations based in Melbourne, Australia and both organizations operate in the commercial sector. Finally, given its contract-based nature, the

construction workforce is fluid and workers move between organizations according to where the work is.

Fifty-nine participants completed the suite of research instruments. Forty-four (74.6%) participants were male and 15 (25.4%) were female. The gender composition of the sample is similar to the gender composition of the Australian construction workforce. According to the Australian Bureau of Statistics, in June 2009, 87.5% of employed persons in the construction industry were male and 12.5% were female (Australian Bureau of Statistics, 2009). Almost half of the participants (n=29, 44.1%) lived with their partner and children, while nine (15.3%) lived with their partner, eight (13.6%) lived alone, one (2.9%) lived with their children and was a single parent, eight (13.6%) lived with their parents, and seven (11.9%) lived with their friends or housemates. Of the 59 participants, 16 (27.1%) were not partnered, nine (15.3%) had a partner who did not work, 12 (20.3%) had a partner in part time employment, and 20 (33.9%) had a partner in full time employment. Forty-seven participants were salaried (79.7%) and 12 (20.3%) were waged. In terms of work location, 13 (22.0%) participants were located onsite in direct construction, 28 (47.5%) participants were located onsite in the site office, and 18 (30.5%) were located in head office. Parental status of participants was split almost evenly, with 29 (49.21%) having no children, and 30 (50.8%) having children. Of those participants who had children, nine (15.3%) had one child under 18 years, nine (15.3%) had two children under 18 years, five (8.5%) had three children under 18 years, and one (1.7%) had four children under 18 years. Six participants (10.2%) had one children 18 years or older, five (8.5%) had 2 children 18 years or older, and one (1.7%) had three children 18 years or older. The demographic characteristics of the sample are summarised in Table 9-1.

Table 9-1 . Demographic characteristics of the sample.

	N	%		N	%
Gender			**Work location**		
Male	44	74.6	On site in direct construction	13	22.0
Female	15	25.4	Onsite in site office	28	47.5
			Head office	18	30.5
Household Status					
Live alone	8	13.6	**Parental status**		
Live with partner	9	15.3	Children	30	50.8
Live with partner and children	26	44.1	No children	29	49.2
Live with children (single parent)	1	1.7			
Live with parents	8	13.6	**No. of children <18**		
Live with friends or housemates	7	11.9	0	35	59.3
			1	9	15.3
Employment status of partner			2	9	15.3
No partner	16	27.1	3	5	8.5
Partner does not work	9	15.3	4	1	1.7
Partner in part time employment	12	20.3			
Partner in full time employment	20	33.9	**No. of children =>18**		
Missing data	2	3.4	0	47	79.7
			1	6	10.2
Type of pay			2	5	8.5
Salaried	47	79.7	3	1	1.7
Waged	12	20.3			

The mean age of participants was 35.49 years (SD = 10.18 years). The average weekly work time of participants was 54.27 hours (SD = 8.66 hours), and the average weekly travel time was 6.72 hours (SD = 3.64 hours). These results are summarised in Table 9-2.

Table 9-2. Age, work hours and travel hours of the sample.

Variable	Mean	SD
Age (years)	35.49	10.18
Weekly work time (hours)	54.27	8.66
Weekly travel time (hours)	6.72	3.64

9.3 Q sort (demands) data

The first stage of data analysis was factor analysis, which served to group participants according to their ranking of demands. The outcome of this data analysis phase was the formation of groups of participants who experienced demands in a similar way. As outlined in Chapter 8, the Q sort data were factor analysed using the PQMethod software, version 2.20. Principal components analysis which applied varimax rotation yielded a four-factor solution.

Four groups were identified through factor analysis. The defining sorts for each factor are shown in Table 9-3. Factor one was defined by 25 sorts (participants), factor two by eight sorts (participants), factor three by 13 sorts (participants), and factor four by four sorts (participants). The factors accounted for 28%, 11%, 18% and 10% of the explained variance. The ranking of demands by each group is outlined in Appendix 9a for group one, 9b for group two, 9c for group three, and 9d for group four. The following sections discuss the findings according to each factor group.

Table 9-3. Defining sorts for each factor.

Participant	1	2	3	4
Graham	**0.789**	0.084	0.212	0.123
Patrick	**0.773**	0.195	0.230	0.020
Karly	**0.760**	0.202	0.466	0.173
David	**0.757**	0.135	0.241	0.247
Lincoln	**0.754**	0.103	0.288	0.213
Bruno	**0.747**	0.214	0.206	0.445
Julie	**0.738**	0.367	0.341	-0.193
Cody	**0.735**	0.097	0.495	0.242
Callum	**0.734**	0.355	0.397	-0.031
Jake	**0.727**	0.013	0.439	0.249
Gary	**0.723**	0.118	0.522	0.213
Larry	**0.716**	0.347	0.101	0.337
Alex	**0.697**	0.272	0.550	0.119
Jade	**0.695**	0.197	0.506	0.144
Antonio	**0.692**	0.131	0.159	0.358
Michael	**0.668**	0.143	0.509	0.238
Malcolm	**0.658**	-0.001	0.326	0.177
Pepe	**0.658**	0.196	0.203	-0.004
Dean	**0.639**	-0.086	0.120	0.083
Aidan	**0.635**	0.018	0.430	0.334
Beverly	**0.633**	0.336	0.151	0.202
Jermaine	**0.615**	0.314	0.045	0.529
Martin	**0.591**	0.253	0.458	-0.003
Stan	**0.550**	0.267	0.341	0.336
Barry	**0.495**	0.378	0.074	0.359
Travis	0.104	**0.790**	-0.123	-0.028
Jane	-0.212	**0.704**	0.107	0.034
Phil	0.259	**0.619**	0.097	0.166
Julian	0.448	**0.601**	0.255	0.230
Jason	0.233	**0.565**	0.269	0.207
Laura	0.220	**0.562**	0.445	-0.169
Les	0.215	**0.524**	0.384	0.147
Sam	0.247	**0.483**	0.252	0.309
Anna	-0.127	-0.004	**0.739**	0.352
Mary	0.219	0.337	**0.723**	0.050
Jasper	0.415	0.072	**0.709**	0.236
Sally	0.423	0.245	**0.702**	0.233
Len	0.348	0.136	**0.633**	0.278
Neville	0.496	0.328	**0.622**	0.029

Participant	1	2	3	4
Mandy	0.263	0.102	**0.625**	0.021
Carlo	0.445	0.169	**0.594**	0.476
Pierce	0.379	0.122	**0.564**	0.174
Alistair	0.509	0.234	**0.595**	0.131
Arthur	0.283	0.245	**0.561**	0.429
Sian	0.372	0.242	**0.549**	0.097
Janis	0.341	0.141	**0.501**	0.016
Brent	0.284	-0.031	0.218	**0.707**
Paul	0.173	0.049	0.021	**0.638**
James	0.103	0.401	0.291	**0.628**
Amy	0.099	0.487	0.083	**0.613**
John	0.439	0.365	0.162	0.250
Bob	0.513	0.033	0.604	0.445
Gayle	0.127	0.567	0.179	0.592
Ron	-0.331	0.431	0.376	0.491
Justin	0.299	0.510	0.483	0.407
Tim	0.385	0.389	0.378	0.312
Alan	0.618	0.022	0.581	0.105
Cain	0.569	-0.076	0.369	0.574
Aaron	0.564	0.137	0.602	0.034

9.4 Group one

This sections describes the demographic characteristics of group one, and presents the findings of the demand, resources and questionnaire data.

9.4.1 Demographic characteristics

Twenty-five participants loaded onto factor one. The majority of the group was male (n=21, 84.0%). Two participants (8.0%) lived alone, five (20.0%) lived with their partner, nine (36.0%) lived with their partner and children, five (20.0%) lived with their parents, and four (16.0%) lived with friends or housemates. Of the 25 participants, ten (40.0%) had no partner, three (12.0%) had a partner who didn't work, five (20.0%) had a partner in part time employment, and seven (28.0%) had a partner in full time employment. The majority of the group was salaried (n=22, 88.0%). Six (24.0%) participants were located in head office, three (12.0%) were located onsite in direct construction, and 16 (64.0%) were located onsite in the site office. Eleven participants had children (44.0%) and 14 (56.0%) had no children. Of those participants who had children, four (16.0%) had one child under 18 years, two (8.0%) had two children under 18 years, and two (8.0%) had three children under 18 years. One participant (4.0%) had one child 18 years or older, two (8.0%) had two children 18 years or older, and one (4.0%) had three children 18 years or older. The demographic characteristics of group one are summarised in Table 9-4.

Table 9-4. Demographic characteristics of group one.

	N	%		N	%
Gender			**Work location**		
Male	21	84.0	On site in direct construction	3	12.0
Female	4	16.0	Onsite in site office	16	64.0
			Head office	6	24.0
Household status					
Live alone	2	8.0	**Parental status**		
Live with partner	5	20.0	Children	11	44.0
Live with partner and children	9	36.0	No children	14	56.0
Live with children (single parent)	0	0			
Live with parents	5	20.0	**No. of children <18**		
Live with friends or housemates	4	16.0	0	17	68.0
			1	4	16.0
Employment status of partner			2	2	8.0
No partner	10	40.0	3	2	8.0
Partner does not work	3	12.0			
Partner in part time employment	5	20.0	**No. of children =>18**		
Partner in full time employment	7	28.0	0	21	84.0
			1	1	4.0
Type of pay			2	2	8.0
Salaried	22	88.0	3	1	4.0
Waged	3	12.0			

The mean age of participants of group one was 33.32 years (SD = 10.87 years). The average weekly work time of participants was 57.88 hours (SD = 6.58 hours), and the average weekly travel time was 6.38 hours (SD = 4.28 hours). These results are summarised in Table 9-5.

Table 9-5. Age, work hours and travel hours of group one.

Variable	Mean	SD
Age (years)	33.32	10.87
Weekly work time (hours)	57.88	6.58
Weekly travel time (hours)	6.38	4.28

A one-way between groups analysis of variance was conducted to explore weekly work hours and weekly travel time between the four groups. A significance difference was indicated for work hours between group one and group four. Closer inspection of the results revealed that one member of group four worked on a part time basis, which impacted upon the mean hours worked (reported in Section 9.7 of this Chapter). In only including full time

workers in the analysis, no significant differences were indicated. No significant differences were indicated for travel time.

9.4.2 Household duties

Members of group one spent on average of 6.40 hours per week (SD=3.17) in household duties. Two (8.0%) members received no help at all with household chores, one (4.0%) almost never received help, one (4.0%) seldom received help, four (16.0%) sometimes received help, four (16.0%) frequently received help, four (16.0%) received help almost all the time, and nine (36.0%) received help all the time.

A one-way between groups analysis of variance was conducted to explore the weekly hours spent in household duties between the four groups, however no significant differences were indicated.

9.4.3 Childcare duties

For group one, 14 (56.0%) members indicated that they did not have children and therefore had no childcare duties. Of the 11 members with children, two (8.0%) members received no help at all with childcare duties, one (4.0%) almost never received help, one (4.0%) seldom received help, one (4.0%) frequently received help, one (4.0%) received help almost all the time, and five (20.0%) received help all the time. In terms of amount of help received, one member (4.0%) reported receiving no help with childcare duties, three (12.0%) received 1 – 5 hours per week, one (4.0%) received 21 – 30 hours per week, one (4.0%) received 31 – 40 hours per week, and five (20.0%) received more than 40 hours of help per week. Of the 11 members who had children, none of their children had special needs due to a physical, intellectual, emotional or behavioural disability.

9.4.4 Care duties for parents and relatives

Twelve (48.0%) participants of group one did not have elderly or ailing parents or relatives, eight (32.0%) had no care duties, four (16.0%) had a low level of care duties, and one (4.0%) had a medium level of care duties. In terms of frequency of help, 17 (68.0%) members indicated not having elderly or ailing parents or relatives, one (4.0%) received no help with elderly or ailing parents or relatives, five (20.0%) sometimes received help, and two (8.0%) frequently received help. In terms of amount of help received, 17 (68.0%) members indicated not having elderly or ailing parents or relatives, two (8.0%) members received no help, four (16.0%) received 1 - 5 hours per week, one (4.0%) received 6 – 10 hours of help per week, and one (4.0%) received 21 – 30 hours of help per week.

9.4.5 Responsibility for others

Seven (28.0%) participants reported having little or no responsibility for others outside of work, four (16.0%) had below-average amount of responsibility, 12 (48.0%) had an average amount of responsibility, and two (8.0%) had above average responsibility for others. The mean score was 2.36 (SD=0.99), which reflects a below average amount of responsibility for group one.

A one-way between groups analysis of variance was conducted to explore responsibility for others between the four groups. However, no significant differences were indicated.

9.4.6 Role salience

The role salience measure which comprised of three sub scales was subject to factor analysis and internal consistency reliability analysis, prior to proceeding with further analysis. The results were considered satisfactory and are reported in Appendix 9e. For group one, family role salience was rated higher (mean=5.4, SD=1.01) than work role salience (mean = 4.5, SD=0.91), and community role salience (mean=3.7, SD=1.32). The results are outlined in Figure 9-2.

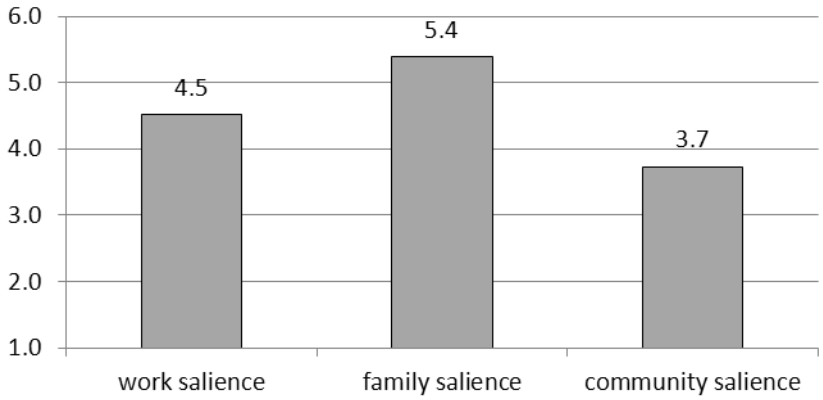

Figure 9-2. Mean scores of role salience for group one.

A one-way between groups analysis of variance was conducted to explore work, family and community role salience between the four groups. There was a statistically significant difference for family salience between group one, group two and group three: F (3, 45)= 5.65, p=.002. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for group one (mean=5.4, SD=1.01) was significantly different from group two (mean=6.62, SD=0.58). Post-hoc comparison also indicated that the mean score for group two (mean=6.62, SD=0.58) was significantly different from group three (mean=5.45, SD=0.64). Significant differences between groups were not found for work and community salience.

9.4.7 Role importance and time allocated to roles

Participants distributed 100 points into three categories (family, work, and community) according to importance in their life at the present time, and then according to how time is allocated in their life at the present time. Mean scores were calculated, as shown in Figure 9-3. For this group, family was rated as most important (mean=52.80, SD=18.13), followed by work (mean=33.12, SD=12.87), and community (mean=14.04, SD=14.21). This group allocated the most time to work (mean=63.60, SD=12.54), followed by family (mean=28.28, SD=14.91), then community (mean=8.39, SD=8.22).

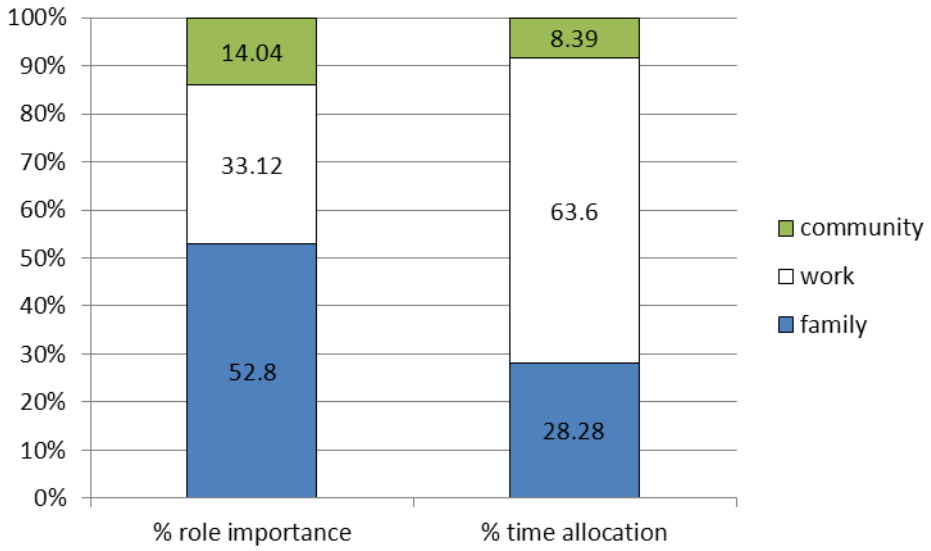

Figure 9-3. Mean scores of role importance and time allocated to roles for group one.

A one-way between groups analysis of variance was conducted to explore work, family and community role importance between the four groups. However, no significant differences were indicated.

A one-way between groups analysis of variance was conducted to explore time allocated to work, family and community roles between the four groups. There was a statistically significant difference for time allocated to family between group one and group two: F (3, 45) = 3.39, p=.026. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for group one (mean=28.28, SD=14.91 was significantly different from group two (mean=45.63, SD=14.50).

9.4.8 Segmentation preferences

The segmentation measure was subject to internal consistency reliability analysis, prior to proceeding with further analysis. The scale indicated acceptable internal consistency (alpha coefficient = 0.924). The mean score was 5.33 (SD=1.39) which suggests that this group has a high preference for segmenting work and family.

A one-way between groups analysis of variance was conducted to explore segmentation preferences between the four groups. However, no significant differences were indicated.

9.4.9 Demands experienced by members of group one

This section describes the ranking of demands for group one. Figure 9-4 summarises how members of group one experienced all of the demands arising from the work, family and community domains, ranging from a very great extent (7) through to no extent at all (1). In this figure, each code corresponds to a demand, for example, 'WD1' corresponds to 'time in paid work' which was experienced by this group to a very great extent. Each of the codes and their corresponding demands are outlined in more detail in Figure 9-5, which shows the configuration of demands representing the model Q sort for members of group one.

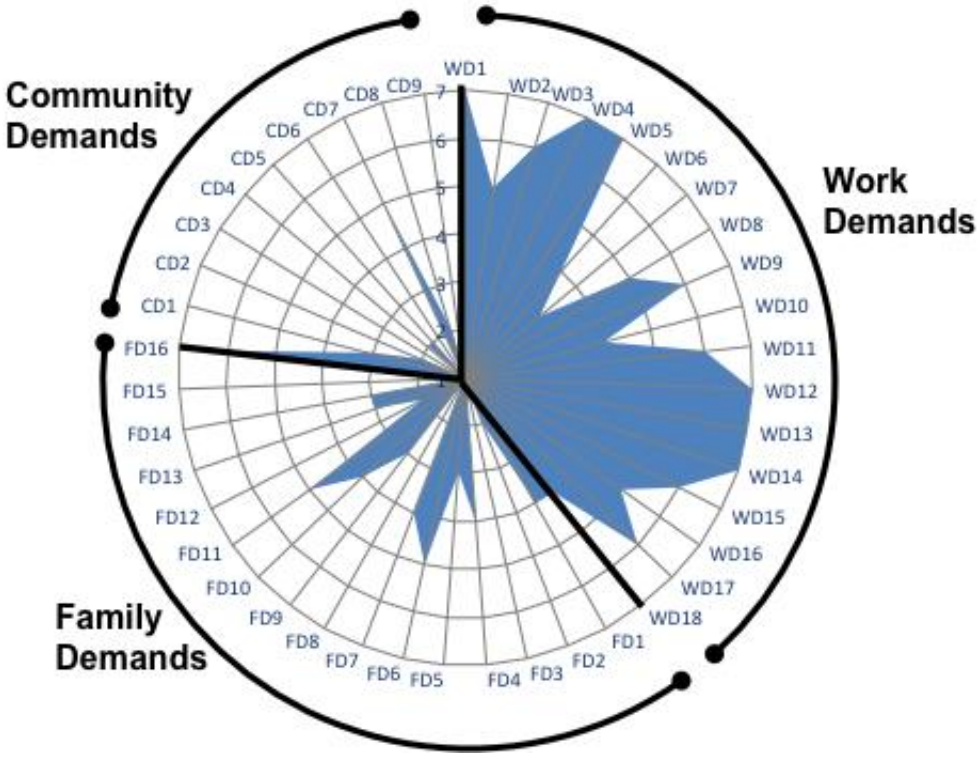

Figure 9-4 Experience of demands arising from the work, family and community domains for group one.
(1=to no extent at all, 7=very large extent)

Experience of demands of this group is discussed according to the themes of: (i) workload and frequency; (ii) work culture and expectations; (iii) strain at work; (iv) compromise to meet work commitments; (v) engagement in family and home activities; and (vi) engagement with the community.

NO EXTENT AT ALL (1)					VERY LARGE EXTENT (7)	
CD9. undertaking parent-based pre-school and school related activities	FD13. undertake formal training and education	FD14. participating in self-interest activities	FD7. household relationship conflict	WD16. interpersonal conflict at work	WD11. mental strain at work	WD1. time in paid work
CD3. time in religious and faith activities	CD2. emotional strain in volunteering	CD1. time allocated to volunteering	WD18. undertake training and education for work	FD6. time in household tasks	WD15. co-worker expectations	WD12. industry expectations
FD3. time caring for your friends children	CD4. hours and schedule of health, welfare and community organizations	FD9. unfairness in household work	FD11. family activities at work	WD2. commuting time	WD17. project characteristics	WD5. overtime hours
FD8. child with a disability	CD8. hours and schedule of training and education organizations	FD5. time caring for pets	WD10. physical strain at work	FD12. health and fitness activities	WD3. non standard work schedule	WD13. organizational expectations
CD6. limited or no access to public transport	CD5. hours and schedule of schools	FD15. time supporting your children's activities	FD1. time caring for your children	WD8. work activities at home	WD9. emotional strain at work	WD14. supervisor expectations
FD16. time supporting your grandchildren's activities	FD2. time caring for your relatives children	WD7. overnight travel for work	WD6. job insecurity	CD7. hours and schedule of self interest courses and groups	FD17. time in social activities	WD4. work over load
			FD4. time caring for relatives			

Figure 9-5. Configuration of demands representing the model Q sort for members of group one.

9.4.9.1 Workload and frequency

Demands relating to time spent in paid work were experienced by members of this group to a very large extent. These included time in paid work (WD1), overtime hours (WD5), and work overload (WD4). Non-standard work schedule (WD3) was experienced by members to a large extent. Members' reported working long hours on a regular basis. For example, Gary, a graduate working onsite in the site office, commented "*I get here 6.30 for a 7am start. I get here a bit early in case I get held up on the train. I can't leave before 5 – 5.30. If the guys are still onsite I have to stay*". Similarly, Callum, a graduate working onsite in the site office, commented "*7am to 6pm is a normal working day for me*". Many members expected that time spent at work would increase as the project moved into its busiest period. David, a manager onsite, stated "*right now it's a quiet stage of the project. I tell my staff to make the*

most of it before it gets busier". Similarly, Jake, a graduate based onsite in the site office, commented "*during the height of the job I work from 7am to 8pm but this is not sustainable though*". Members' acknowledged that regular long work hours were primarily driven by industry and organizational culture and expectations, and this is discussed in the following section.

Saturday was reported as a regular working day for many members of this group. Some members, such as Karly, were required to work onsite in the site office on one in four Saturdays, whereas members such as Gary, Jake and Julie were required to work every second Saturday. In explaining Saturday work, Gary commented "*I start at 7.30 on Saturday and can work through until 3pm. But it can be later. Depends on how long the guys work onsite*". In contrast to going into work, Pepe, a senior manager based in head office, often worked from home during the weekend. Pepe commented "*I don't go into work on Saturday. I take work home three to four nights a week. I also take work home on weekends*". Work activities at home (WD8) was a demand this group experienced to a considerable extent. As members experienced a consistently high work load, taking work home was one strategy which enabled participants to complete work within the specified deadline, as well as meeting concurrent home-based demands such as childcare.

9.4.9.2 Work culture and expectations

Demands originating from work-based culture and expectations were experienced by members of group one to a very large extent. These included industry expectations (WD12), organizational expectations (WD13) and supervisor expectations (WD14), and to a slightly lesser degree, co-worker expectations (WD15). Many participants perceived that industry expectations and organizational expectations were intrinsically linked to long working hours and non-standard working hours. Alex, a graduate based onsite in the site office, explained that "*industry and organizational expectations drive big hours, overtime and weekend work. But this organization is no different to other construction organizations*". Callum, also a graduate working onsite in the site office, commented that "*hours and volume of work are associated with this industry. You receive no sympathy from other construction organisations*". Pepe, a senior manager based in head office, commented on industry expectations and explained that "*the norm is six to seven working days per week in this business. It's deadline driven, that's the industry norm*".

Apart from long working hours, organizational culture impacted upon expected start and finish times for participants, and this culture was reinforced by supervisors. For some participants, start and finish times were stated overtly, while for others it was implicitly

understood. Generally, these participants felt they lacked control, autonomy and flexibility over their start and finish times. Furthermore, there was a perception by members that long working hours was a reflection of commitment to the organisation. Beverly, an administrator based in head office, explained that "*I wanted to start at 8.30 when I first started at this organization but the culture is that you work hard if you start at 8.00*". Gary, a graduate working onsite in the site office, commented that "*I have tried for autonomy at work, but there are unsaid rules like hours worked and leaving time. If I tell my manager in advance that I am leaving early then he would be okay with that. But normally I would stay later*". Similarly Michael, a graduate based onsite in the site office, commented that "*you are expected to work long hours but you are not told upfront. If I work from 7am to 5.30pm I'm made to feel like I'm not putting enough time in. If I work from 7am to 6pm or after then I am made to feel I'm putting enough time in…. on the days when it's quieter I would like to go home earlier but feel like I need to stay at work*".

Participants reported that they perceived that their supervisors expected them to carry out the job that they had been assigned, and experienced this as very high demand. Many members suggested that this was a reasonable expectation of their supervisor and was fundamentally part of their job. For example, Barry, a construction manager, explained that "*my supervisor expects me to manage projects, and this is reasonable*". Similarly Jake, a project engineer based onsite in the site office, commented that "*I am expected to do my work*". Malcolm, a labourer based in direct construction activity, explained that "*my supervisor has expectations. There are jobs that get done in certain timeframes*". In contrast to supervisor expectation, expectations from co-workers were driven by the interdependent nature of project-related activities. Participants explained that co-workers were dependent on them to finish their task so that another team member could commence a task. Alex explained that "*you need to pull your weight, as packages rely on others, the interdependencies. I must complete the services so that my co-workers can keep working on their tasks*".

9.4.9.3 Strain from work

Demands relating to work-based strain were experienced by members of group one to a large extent. These included mental strain at work (WD11), emotional strain at work (WD9), and interpersonal conflict at work (WD16). Participants explained that strain was experienced due to varying reasons including work overload, industry culture, stakeholder management, and the unplanned and reactive nature of project work. Some members commented that the strain they experienced at work often crossed over into their home life. Alex, a graduate working onsite in the site office, commented that "work *is stressful, and I'm*

always thinking about work and what needs to be done". Jake, a project engineer working onsite in the site office, commented "*I have a very strong inability to stop thinking about work at home*". Similarly, David, a site supervisor, commented "*stress at work infiltrates home life and occupies my thoughts*". There were varying reasons why members experienced strain from work. Stan, a project coordinator working onsite in the site office, explained that stakeholder coordination and resolving issues contributed to the strain he experienced. Callum, a graduate working onsite in the site office, explained "*on Sunday I think about the week of 11 hour days I have coming up which is mentally draining*". David, a site supervisor, explained that in his coordination role he experienced a great deal of mental and emotional strain. David explained that "*there is conflict, confrontation and arguments which I find most difficult. It's an aggressive and highly charged industry. People are passionate, and passion comes out as anger*". For Pepe, a senior manager based in head office, managing contracts and managing risks contributed to challenging and difficult work, leading to mental strain. In contrast, Aidan, a project design manager based in head office, explained that it was "*the unexpected things that cause mental strain. It's the need to concentrate on a task and complete it in a limited amount of time*". Both Barry, a senior manager, based in head office, and Gary, a graduate based onsite in the site office, indicated that interpersonal conflict at work was often experienced with stakeholders who were not employed directly by the organization and these could be clients, contractors and tradespeople. Gary explained that there was often "*differing perceptions of timeframes which caused conflict*". Larry, a senior manager based in head office, also experienced conflict as a result of "*clients being difficult or wanting more work done*".

Many members of the group reported that strain at work was often linked to project characteristics (WD17) and in particular, the unpredictable nature of projects. Dean, a health and safety officer, commented that "*project characteristics has an impact on timelines, and things seem to be moving faster now compared to ten years ago*". Larry, a senior manager based in head office, commented "*in projects, things change. They can be unpredictable, with lots of unplanned activities*". The unpredictable nature of projects led to time management issues for some members of this group. Often, participants were unable to complete their daily planned activities as unplanned activities often had to take precedence and be dealt with immediately, which added to an already high workload. Beverly, an administrator, commented "*work is often reactive, and when an emergency arises it must be dealt with now*". David, a site manager, explained that "*crisis rectification and crisis resolution leads to emotional strain…. things change regularly, hourly, daily. My job can be very reactive which is stressful*". It was generally acknowledged that the construction industry was largely project-based and this impacted upon the demands experienced by this group.

9.4.9.4 Compromising to meet work commitments

As previously reported in section 9.4.6 and 9.4.7, group members' family role (mean=5.39) was more important than members' work role (mean=4.51), however this group allocated 64% of their time to work and 28% of their time to family, and worked on average 57.88 hours per week. However, while family was considered more important than work for members of group one, work was often given priority due to the long working hours culture of the construction industry. For example, Callum, a graduate, commented *"when I am hard up for time fitness suffers first, social life suffers second, but work never suffers*". Many members reported feeling time poor and that time spent at work impacted upon other areas of their life such as time with friends and family, time for social activities and health and fitness activities, volunteering, and personal administrative tasks such as paying bills and banking. Gary, a graduate who worked onsite in the site office, commented "*I have cut down on my sleep. Now down to five hours so that I can fit in other things like fitness and a social life. I struggle to have a social life as I run out of time. Have many hobbies which I like to maintain, I have pets, and see my family*". Callum, also a graduate based onsite in the site office, explained "*it's hard to get to the bank or get a haircut during the week as we have to do it during work time. Personal and administrative stuff is hard to get done and is a demand*". Karly, also a graduate, commented "*I would like to have time outside of work to do some self-interest activities. At the moment I have time only to socialise or exercise*". Karly went on to explain that she tries to walk to work so that she can fit exercise into her day. Julie, a graduate, commented "*right now getting through the day is demanding. There is not enough time in the day. I need extra time. Don't have time to find a good accountant or financial advisor because of the hours I work and the time I spend at work*".

Some members of the group indicated that long working hours had a direct impact on what activities they did in their non-work time. For some, this meant cutting out activities altogether or limiting time spent on activities. Michael, a graduate working onsite in the site office, explained that he had decreased the amount of time he spent on sports, "*I've cut out lacrosse training twice during the weekdays as it starts at 7pm. Having to get up and do another long day has meant that I would rather go home after work and rest*". Callum, also a graduate, explained that he had cut back on social activities so that he got enough rest for work, "*I try to have a social life, but I have to keep a lid on things when I'm out on the weekend. It's hard when I'm out having a good time. I watch the clock because I have to get home to get some sleep for an early start the next day. It's a vicious cycle – if I go out late I end up feeling awful on Monday*". Larry, a senior manager, also experienced the need to prioritise tasks due to being time poor. Larry commented "*I have small time left after work, so I spend it with family. No time left for exercise or time for self*".

9.4.9.5 Engagement in family and home activities

Members of this group were generally engaged in family- and home-based activities to a low to medium extent. This group reported having a below average amount of responsibility for care of others outside of work, and this was also reflected in the ranking of caring-related demands. Fifty-six percent of members of this group did not have children, and therefore child-related demands were experienced to no extent. For members who had children, time caring for children (FD1) was experienced to some extent, while time supporting children's activities (FD15) was experienced to a slight extent. Members with dependent-aged children indicated that they were not the primary care giver, and relied heavily on their partner for assuming child care responsibilities. Stan, a project coordinator, commented that "*my partner is able to look after the house, child and pets*". Antonio, an estimator based in head office, explained that "*my spouse has flexibility with her job with start and finish times, plus works part time. This allows my home based demands to be met. If there was a combination of two roles like mine, I couldn't meet my demands*". In terms of care for elderly or ailing parents or relatives, this group had a low level of care duties.

While caring-based demands were experienced from a mid to low range, time in social activities (FD16) and health and fitness activities (FD11) were experienced to a large extent by this group. This was particularly the case for the single child-free members of this group who had low care-based responsibilities, as well as for the older members of this group who had children aged 18 and older. Household relationship conflict (FD7) was experienced by partnered members of this group to some extent, and this was primarily driven by the amount of hours spent at work. Lincoln, a labourer based onsite in direct construction activity, explained that his main objective now was to make money to look after his family and this involved working long hours, however his wife "*gave him a hard time*" because they did not spend much time together. Similarly, Graham, a senior manager based in head office, experienced tension with his wife due to his long working hours.

9.4.9.6 Engagement with the community

This group indicated very low engagement with the community, as most community-based demands were experienced to no extent at all or to almost no extent. Community-based demands which related to children, such undertaking parent-based pre-school and school activities (CD9), did not apply to members of this group who were parents as they did not assume primary care giver responsibilities. The religious-based demand (CD3) was experienced to no extent at all. This group indicated allocating 8.39% of their time to the community, and this was primarily reflected in volunteering activities. Time allocated to volunteering (CD1) was experienced to a slight extent by this group. For example, one

member was a foster parent, and another did gift wrapping to raise money for charity. Another member of this group participated in volunteering activities which had been arranged by his work organization. However, some members indicated that they would like to increase time spent in volunteering but couldn't do so as they were constrained by long working hours. Julie, a graduate, commented "*I don't do volunteering now, but not by choice……feel like it's missing in my life. I did Saturdays while I was at uni. But now I work every second Saturday so cannot commit to the volunteering. I also need some time to myself when I am working every second Saturday. But that's really missing"*. Like Julie, Gary also used to volunteer prior to commencing full time work, "*I did a lot of community work during school and uni. I've been overseas to volunteer. But no time now though*". Comments such as these support the community salience score which indicated that members of this group perceive that their community role is important to some extent.

9.4.10 Resources required to meet high-ranked demands

Participants indicated which resources would be helpful in meeting demands which were experienced to a considerable, large extent and very large extent. Results are summarised in Figure 9-6, in which each resource is allocated a code on a scale ranging from zero % to 100%. For example, WR1 corresponds to autonomy at work, which is considered important by 92% of members in meeting their high ranked demands. Appendix 9f summarises the rating for each resource. Results indicate that all of the 69 resources were rated by group members as 'important' to varying degrees. Resources considered as most important in meeting high-ranked demands are discussed according to the themes of: (i) support from work; (ii) work control; (iii) satisfaction from work; (iv) support from family; and (v) time for self.

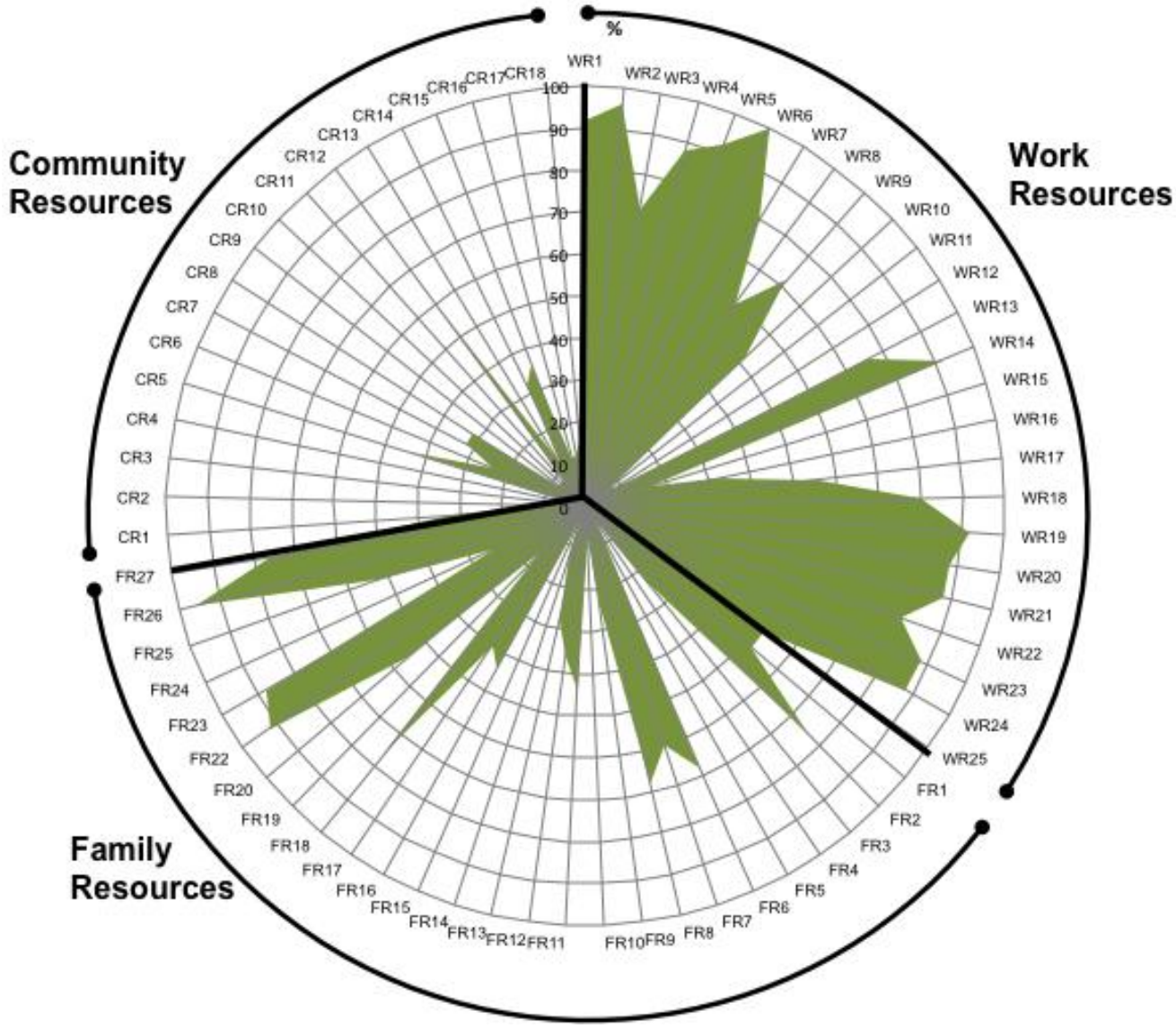

Figure 9-6. Resources considered important by members of group one to meet their high-ranked demands.

9.4.10.1 Support from work

Various forms of support provided by the organization were rated by members of group one as important in meeting their high ranked demands. Resources included time off work for family (WR13, n=19, 76%), time off work for personal reasons (WR14, n=23, 92%), supportive work-life culture (WR18, n=20, 80%), emotional support from supervisor (WR19, n=23, 92%), emotional support from co-workers (WR20, n =22, 88%), information support from supervisor (WR21, n=22, 88%), information support from co-workers (WR22, n=20, 80%), practical support from supervisor (WR23, n=22, 88%), and practical support from co-workers (WR24, n=22, 88%). Given that members of this group ranked demands relating to workload and frequency, and strain from work to a high extent, these results suggest that support-related resources originating from the organization are highly valued by workers. Karly, a graduate based onsite in the site office, commented "*I appreciate the support from the organization, especially the emotional support from co-workers and supervisors.*

Emotional support is very important – it allows me to 'let off steam"". Barry, a senior manager based in head office, commented *"all of the supervisor support roles are all very important for me*". Barry also commented on co-worker practical support: "*the skill set of co-workers and people on projects is important. The better they are, the easier for you. I've noticed that jobs running well have better rounded skill sets*". Bruno, a project manager based onsite in the site office, who has young children, commented "*emotional support from my supervisor is really important. He understands my family situation and pressures outside of work, and is supportive*". Bruno went on to explain the importance of information support: "*information support from workers and supervisors is really important. I can call on their expertise when I don't know the answer*". These results may suggest that emotional support assists members of group one to manage the strain they experience at work, while information and practical support may assist members of group one to meet their assigned tasks.

9.4.10.2 Work control

Resources relating to work control were considered important by members of this group in meeting their high-ranked demands. These resources included autonomy at work (WR1, n=23, 92%), and flexible work hours (WR7, n=20, 80%). Members of this group reported being time poor and often prioritising and limiting home, family and community based activities in order to meet work-based demands. These results therefore suggest that resources which support work control are highly valued by workers as they enable workers to meet demands outside of the work domain, such as getting a haircut, participating in sporting events, and spending time with family and friends. While flexible work hours (WR7) was considered an important resource, some workers contended that this strategy would be challenging on a work site. For example, Julie, a graduate based onsite in the site office commented "*I don't see how we can be flexible when we are working onsite. We have to be here early to brief construction workers and we can't leave until the construction workers are done*".

Some members of group one indicated that a compressed work week (WR17, n=14, 56%) was a strategy which would assist them to gain an extra non-working day. However, while members supported this strategy in principle, they believed that it was not possible as extra hours could not be fitted into an already long working day. Jade, a graduate working onsite in the site office, commented "*we already work a long week and couldn't fit the hours into less days. Monday to Friday is already an 11 hour day. We couldn't do these hours in 4 days*". Similarly, Bruno, a project manager based onsite in the site office, explained "*we couldn't work more hours per day as we already work long hours*". Gary, a graduate working onsite in the site office, suggested that a compressed work week would not be possible for workers

based onsite, as work is currently structured around a six day working week: "*a compressed work week would be nice but it would be hard because there should always be someone onsite supervising guys and this happens from Monday through to Saturday*".

Very few group members considered part time work (WR15, n=4, 16%) as an important resource which would enable them to meet their high ranked demands. This was primarily due to work load as members perceived that they would be unable to meet their work responsibilities if they reduced their hours. Jade, a graduate working onsite in the site office commented "*it would be nice to work part time but I wouldn't have enough time to get everything done*". Julie, also a graduate working onsite in the site office, commented *"part time is not an option in this industry. It's not accepted, and doesn't happen onsite. But it's a worry. Something I am thinking about now. Do I have to choose between work and children?*"

9.4.10.3 Satisfaction from work

The meaning that workers got from their work (WR5, n=23, 92%), pride in their work (WR6, n=25, 100%), and skill utilization (WR2, n=24, 96%) were considered important by group members in enabling them to meet their high-ranked demands. Infact, the only resource which this group scored at 100% was 'pride in your work'. This result may suggest that members perceived that satisfaction gained from work acted as a motivator to maintain working in this highly demanding industry. David, a supervisor based onsite in the site office, commented "*the construction industry is very rewarding as you can see 'the fruits of your passion'. You can see the building completed*". Patrick, also a supervisor based onsite in the site office, explained that the industry was "*very tough but I love work and I love building buildings. If you didn't love it you wouldn't stay (in the industry)*". The majority of members of this group regarded income from work (n=22, 88%) as an important resource. Members considered that they worked hard and were rewarded accordingly. For example, Beverly, an administrator based in head office, commented "*we work hard. We have competent people, and we are rewarded well"*. Pepe, a senior manager based in head office explained "*the industry pays very well. But it's demanding and full on*".

9.4.10.4 Support from family

Resources relating to support from family were considered important by members of this group in meeting their high-ranked demands. These included family cohesion (FR2, n=19, 76%), meaning from family (FR22, n=23, 92%), pride in family (FR23, n=22, 88%), and in-house help with housework and chores (WR18, n=19, 76%), Beverly, an administrator based in head office, explained how she lived with her sister who took responsibility for household chores, "*my sister does the washing, cooking, and cleaning. I earn the money and my sister*

does the home duties". Callum, a graduate based onsite in the site office, lived with housemates and explained how house-related chores were distributed: "*cleaning is no big issue, I just clean for myself. Cooking is okay as my housemates share it around so we all don't have to cook each night*".

Many members of this group also considered that partner emotional support (FR6, n=17, 68%) and partner practical support (FR8, n=17, 68%) were important in meeting their high ranked demands. Some members suggested that support from partners allowed them to focus on work and put in the long hours that were required to meet a high workload. Larry, a senior manager based in head office, commented "*in order to function at this level, I can't be distracted by family. Being supported by home enables me to perform at work. My wife is a great support*". Michael, a graduate based onsite in the site office, also commented "*I get support from my girlfriend, such as cooking dinner and washing clothes so that I can spend more time at work*".

9.4.10.5 Time for self

Resources which provided time for self were considered important by members of group one in meeting their high ranked demands. Resources included time for time for yourself (FR26, n=24, 96%) and time in physical activities (FR27, n=19, 76%). As outlined in section 9.4.9.4, members of group one indicated feeling time poor, and often had to limit non-work activities so as to meet work demands. Time for self was considered a strategy which enabled workers to have some down time inbetween work and family demands, and was a method used to relax and unwind from a demanding work day.

9.4.11 Summation of group one

Group one has a mean age of 33.32 years, and is primarily made of up males who work on average 57.88 hours per week. Just under half of the group is single. The group is made up of both parents and child-free individuals, however all members have low carer responsibilities irrespective of parental status. While family is the most important role for this group it was not strongly demonstrated, as this group allocates 63.6% of their time to work. High ranked demands appear to be driven primarily by work, and work appears to be prioritised over non-work activities. The group indicates being engaged in home and family to a low to medium extent. This group experiences a particularly high level of strain from work. Resources required to meet high-ranked demands centre around support from work, work control, satisfaction from work, and support from family.

9.5 Group two

This section describes the demographic characteristics of group two, and presents the findings of the demand, resources and questionnaire data.

9.5.1 Demographic characteristics

Eight participants are associated with group two. Six members of this group were male (75%) and two were female (25%). One member (12.5%) lived alone, six (75%) lived with their partner and children, and one (12.5%) member lived with their parents. Two (25%) members had partners who did not work, two (25%) had partners in part time employment, three (37.5%) had partners in full time employment, and one member did not indicate partnership status. Four (50%) of the members were salaried and four (50%) were waged. Four (50%) members of the group were located onsite in direct construction, three (37.5%) were located onsite in the site office, and one (12.5%) was located in head office. The majority of this group had children (n=7, 87.5%). Three (37.5%) members had one child under 18 years, two (25%) had two children under 18 years, and one (12.5%) had three children under 18 years. Four (50%) had one child under 18 years or older. The demographic characteristics of group two are summarised in Table 9-6.

Table 9-6. Demographic characteristics for group two.

	N	%		N	%
Gender			**Work location**		
Male	6	75.0	On site in direct construction	4	50.0
Female	2	25.0	Onsite in site office	3	37.5
			Head office	1	12.5
Household status					
Live alone	1	12.5	**Parental status**		
Live with partner	0	0	Children	7	87.5
Live with partner and children	6	75.0	No children	1	12.5
Live with children (single parent)	0	0			
Live with parents	1	12.5	**No. of children <18**		
Live with friends or housemates	0	0	0	2	25.0
			1	3	37.5
Employment status of partner			2	2	25.0
No partner	0	0	3	1	12.5
Partner does not work	2	25.0			
partner in part time employment	2	25.0	**No. of children =>18**		
Partner in full time employment	3	37.5	0	4	50.0
Missing	1	12.5	1	4	50.0
			2	0	0
Type of pay			3	0	0
Salaried	4	50.0			
Waged	4	50.0			

The mean age of group two was 40.63 years (SD = 12.04 years). The average weekly work time of group two was 55.00 hours (SD = 5.37 hours), and the average weekly travel time was 7.93 hours (SD = 3.50 hours). These results are summarised in Table 9-7.

Table 9-7. Age, work hours and travel hours of group two.

Variable	Mean	SD
Age (years)	40.63	12.04
Weekly work time (hours)	55.00	5.37
Weekly travel time (hours)	7.93	3.50

9.5.2 Household duties

Members of group two spent on average of 5.69 hours per week (SD=4.93) on household duties. In terms of help with household duties, one (12.5%) member received no help at all, three (37.5%) frequently received help, two (25%) received help almost all the time, and two (25%) received help all the time.

9.5.3 Childcare duties

Of the seven members of group two who had children, four (50%) received no help at all, and three (37.5%) frequently received help. In relation to amount of hours of help with childcare, four (50%) received no help, one (12.5%) received 6 – 10 hours per week, and two (25%) received 11 – 50 hours per week. Of the members who had children, none of their children had special needs due to a physical, intellectual, emotional or behavioural disability.

9.5.4 Care duties for parents and relatives

In relation to care duties for elderly or ailing parents or relatives, two (25%) members did not have elderly or ailing parents or relatives, three (37.5%) had no care duties, and three (37.5%) had a low level of care duties. In terms of frequency of help, three (37.5%) members indicated not having elderly or ailing parents or relatives, two (25%) received no help, one (12.5%) seldom received help, one (12.5%) frequently received help, and one (12.5%) received help all the time. In terms of amount of help, four (50%) members indicated having no elderly or ailing parents or relatives, one (12.5%) member received no help, one (12.5%) received 1 - 5 hours per week, and one (12.5%) received 6 – 10 hours of help per week.

9.5.5 Responsibility for others

One (12.5%) member of the group reported having little or no responsibility for others, one (12.5%) had below-average amount of responsibility, four (50%) had an average amount of responsibility, and one (12.5%) had above average responsibility for others. The mean score was 2.71 (SD=0.95), which reflects a below average to average amount of responsibility for group one.

9.5.6 Role salience

For group two, family role salience was rated higher (mean=6.62, SD=0.58) than work role salience (mean = 4.25, SD=1.40), and community role salience (mean=3.37, SD=1.53). The results are outlined in Figure 9-7.

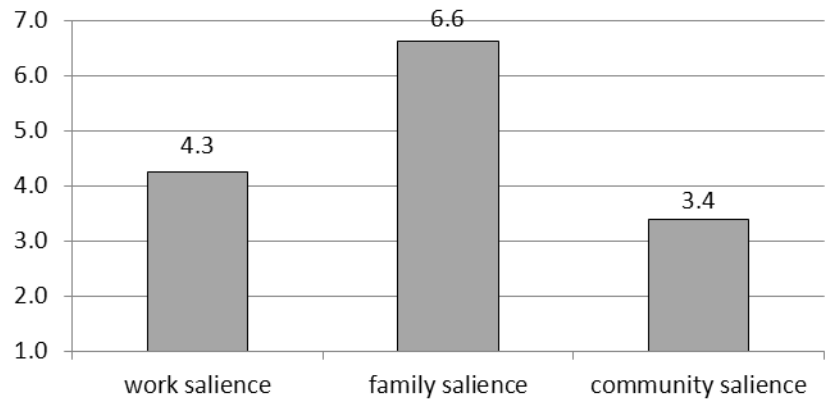

Figure 9-7. Mean scores of role salience for group two.

9.5.7 Role importance and time allocated to roles

Participants distributed 100 points into three categories (family, work, and community) according to importance in their life at the present time, and then according to how time is allocated in their life at the present time. Mean scores were calculated, as shown in Figure 9-8. For this group, family was rated as most important (mean=67.50, SD=19.06), followed by work (mean=26.88, SD=16.67), and community (mean=5.63, SD=7.28). This group allocated the most time to work (mean=50.63, SD=13.99), followed by family (mean=45.63, SD=14.50), then community (mean=3.75, SD=5.82).

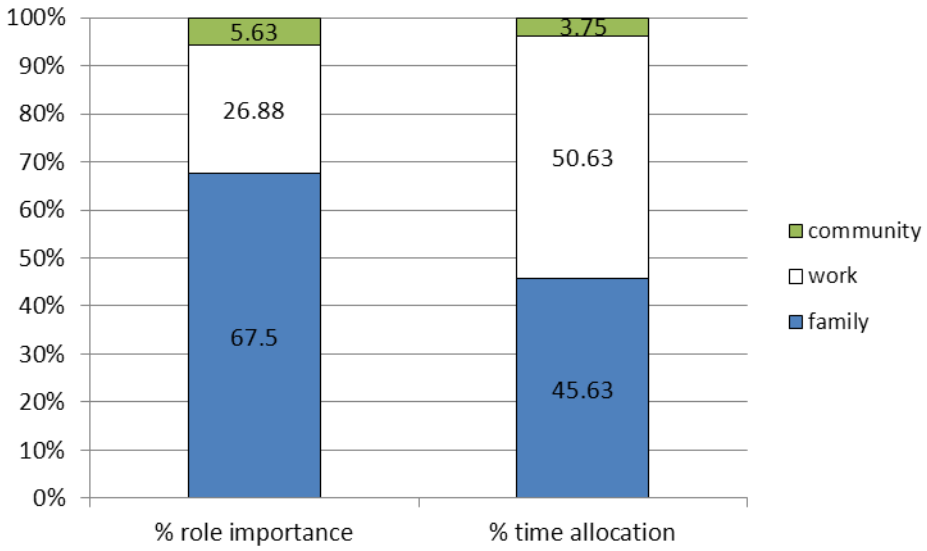

Figure 9-8. Mean scores of role importance and time allocated to roles for group two.

9.5.8 Segmentation preferences

The mean score of segmentation preferences for group two was 5.75 (SD=1.327) which suggests that this group had a high preference for segmenting work and family.

9.5.9 Demands experienced by members of group two

This section describes the ranking of demands for group two. Figure 9-9 summarises how members of group two experienced all of the demands arising from the work, family and community domains, ranging from a very great extent (7) through to no extent at all (1). In this figure, each code corresponds to a demand, for example, 'WD1' corresponds to 'time in paid work' which was experienced by this group to a very great extent. Each of the codes and their corresponding demands are outlined in more detail in Figure 9-10, which shows the configuration of demands representing the model Q sort for members of group two. Members of group two experienced a range of high demands originating from both the work and family domains. In contrast, community-based demands were generally experienced to a lower degree.

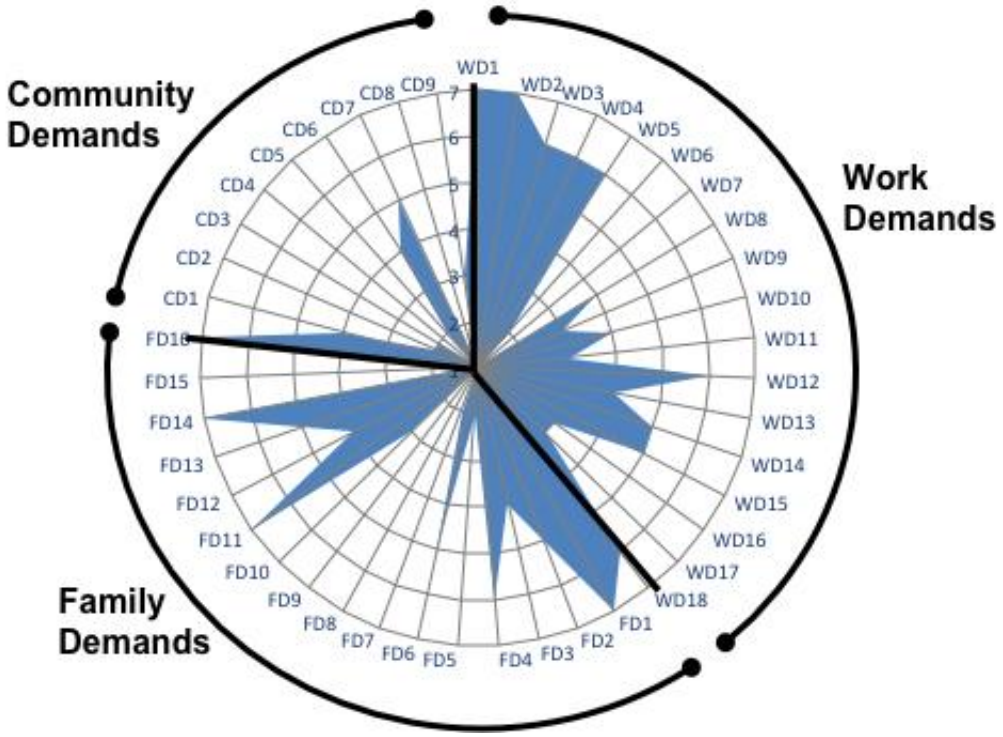

Figure 9-9. Experience of demands arising from the work, family and community domains for group two.
(1=to no extent at all, 7=very large extent)

Experience of demands of this group is discussed according to the themes of: (i) caring duties; (ii) social and fitness activities; (iii) workload and frequency; and (vi) engagement with the community.

NO EXTENT AT ALL (1) **VERY LARGE EXTENT (7)**

CD8. hours and schedule of training and education organizations	FD7. household relationship conflict	WD9. emotional strain at work	CD1. time allocated to volunteering	FD6. time in household tasks	WD3. non standard work schedule	WD1. time in paid work
WD7. overnight travel for work	WD6. job insecurity	WD17. project characteristics	WD8. work activities at home	WD15. co-worker expectations	FD4. time caring for relatives	FD16. time in social activities
FD15. time supporting your grandchildren's activities	CD5. hours and schedule of schools	WD11. mental strain at work	WD13. organizational expectations	WD14. supervisor expectations	WD18. undertake training and education for work	FD1. time caring for your children
FD8. child with a disability	CD3. time in religious and faith activities	CD9. undertaking parent-based pre-school and school related activities	FD12. undertake formal training and education	CD7. hours and schedule of self interest courses and groups	WD4. work over load	WD2. commuting time
CD4. hours and schedule of health, welfare and community organizations	FD5. time caring for pets	FD10. family activities at work	WD10. physical strain at work	FD2. time caring for your relatives children	WD5. overtime hours	FD11. health and fitness activities
FD9. unfairness in household work	CD2. emotional strain in volunteering	WD16. interpersonal conflict at work	FD3. time caring for your friends children	FD13. participating in self-interest activities	WD12. industry expectations	FD14. time supporting your children's activities
			CD6. limited or no access to public transport			

Figure 9-10. Configuration of items representing the model Q sort for members of group two.

9.5.9.1 Caring duties

Demands relating to caring duties for children were experienced by members of group two to a large extent. These included time caring for your children (FD1), and time supporting your children's activities (FD14). The majority of members (87.5%) had children and took an active role in parenting and care duties. For example, Sam, a site supervisor based onsite in the site office, commented "*I have three kids – five years, 18 months, six weeks. I try and keep some time for the kids*". Sam described some of the strategies he used to meet the various demands in his life originating from work and family: "*I try and do things which incorporates a few things. For example, I bring the five year old into work on a Saturday. So, I'm at work and spending time with my kid*". Jane, an administrator based in head office, explained "*I always worked hours around looking after my child*". Travis, a labourer, based

onsite in direct construction, also commented "*I have three kids, 19, 17, 12. The 12 year old still needs care. I choose to care for my children*".

One of the differentiating characteristics of this group compared to group one is that members of this group chose to take an active role in family and caring for their children, although like group one, they were not the primary carer. In instances where children were 18 years and no longer dependent on parents, these members still considered caring for their children as a high priority, which translated into a high demand. The ranking of caring based demands as very high is perhaps reflective of the importance this group places on family role, which was 67.5% in comparison to work role importance which was 26.8%. Similarly, family role salience was rated higher (mean=6.62, SD=0.58) than work role salience (mean = 4.25, SD=1.40) for this group, suggesting that this group consider their family role as more important than their work role. This is also suggested by the ranking of demands relating to care of relatives. Caring for relatives was experienced by this group from a considerable to a large extent, and these particular demands were time caring for your relatives (FD4), and time caring for your children's relatives (FD2).

9.5.9.2 Social and fitness activities

Members of group two were very active outside of work. Many members of this group engaged in health and fitness activities on a regular basis, as well as participating in social activities. This was reflected in related demands, including time in social activities (FD16) and health and fitness activities (FD11). Sam, a site supervisor based onsite in the site office, explained that he was the president of a football club and commented "*my football time is also my time for socialising*". Jason, a labourer based onsite in direct construction activity, coached a senior rugby team and explained that this was also his way of socialising. Phil, also a labourer, based onsite in direct construction activity, spent his spare time helping others with their gardens. Therefore, for some members of this group, participating in self-interest activities (FD13) was also a way in which to engage in social activities.

This group ranked health and fitness activities (FD11) higher than the other three groups. Many members of this group took an active role in their own health and fitness. Les, a labourer based onsite in direct construction activity, commented "I *go to the gym six days a week*". Laura, a graduate based onsite in the site office, commented "*I do yoga before and after work. I also run*". Julian, a senior manager based in head office, also explained that he goes to gym on a regular basis. For this group, health and fitness related activities were a priority, and exercise was undertaken on a regular basis.

9.5.9.3 Workload and frequency

This group reported working on average 55.00 hours per week (SD = 5.37 hours), and spending on average 7.93 hours (SD = 3.50 hours) commuting to and from work. According to the ranking of demands, both of these activities were experienced by members to a very large extent. In addition, non standard work schedule (WD3), work overload (WD4), and overtime hours (WD5) were experienced by members of this group to a large extent. Members of the group acknowledged that long working hours was the norm. For example, Sam, a site supervisor based onsite in the site office, commented "*time management is the big thing in construction as we work the big hours. It's a job where you start and you go hard from the time you are here to the time you go home*". Les, a labourer based onsite in direct construction activity, commented "*long hours is part of the industry*". For members of this group however, working long hours was not perceived as a negative concern. On the contrary, members appeared to accept and embrace the hours they worked. Les, a labourer based onsite in direct construction activity, commented "*I am happy to take the responsibility and do the hours. Long hours is part of the industry. I am happy with the work hours – they don't bother me*". In contrast to group one, emotional strain (WD9) and mental strain (WD11) were experienced to a slight extent by this group. Additionally, workload and frequency did not appear to limit the activities members' did outside of work. Outside of work, this group actively participated in caring duties as well as social and fitness activities.

Commuting time was experienced to a very large extent by members of the group, and was essentially considered as an extension of working time. Members considered that the work day commenced when they left their home and commenced their commute to work, and finished when they had arrived home at the completion of their commute. Average weekly travel time was 7.93 hours, and this was in addition to a long average working week of 55.00 hours. Jason, a labourer based onsite in direct construction activity, explained that it took him one hour to get to work, and an hour and a half to get home, "*if I finish work at 5.30pm I'll get home at 7pm*". Sam, a site supervisor based onsite in the site office, indicated travelling at least an hour to get to work and an hour to get home. For many members, travelling to and from work also had a strain component. For example, Laura, a graduate based onsite in the site office, indicated that travelling to and from work was stressful, "*I sit in traffic. It's bumper to bumper. It's the stress of just sitting there and not moving. I could be using that time for something else*". Group members acknowledged that commuting time varied according to the project they were assigned to. Sometimes the project was located close to home and commuting time was minimal, while other times the project was located a long way from home and commuting times were high.

9.5.9.4 Engagement with the community

Members rated their community role importance as very low, and indicated allocating little time to community (3.7%), and ranking of demands were reflective of this. For example, time allocated to volunteering (CD1) was experienced to some extent, while time in religious and faith activities (CD3) was experienced to almost no extent. Hours and schedule of schools (CD5) and undertaking pre-school and school related activities (CD9) were demands which were experienced my members to a low extent, and this was because members' partners took on this role. Hours and schedule of self interest courses and groups (CD7) was experienced by members to a considerable extent. On some occasions, members had to forgo participating in their non-work activities as they clashed with work hours. For example, one of the members had to give up yoga classes as the time of the class clashed with work time.

9.5.10 Resources required to meet high-ranked demands

Participants indicated which resources would be helpful in meeting demands which were experienced to a considerable, large extent and very large extent. Results are summarised in Figure 9-11, in which each resource is allocated a code on a scale ranging from zero % to 100%. For example, WR2 corresponds to skill utilization at work, which is considered important by all members (100%) in meeting their high ranked demands. Appendix 9g summarises the rating for each resource. Results indicate that all of the 69 resources were rated by group members as 'important' to varying degrees. Resources considered as most important in meeting high-ranked demands are discussed according to the themes of: (i) support from work; (ii) work control; (iii) satisfaction from work; (iv) support from family; and (v) time for self.

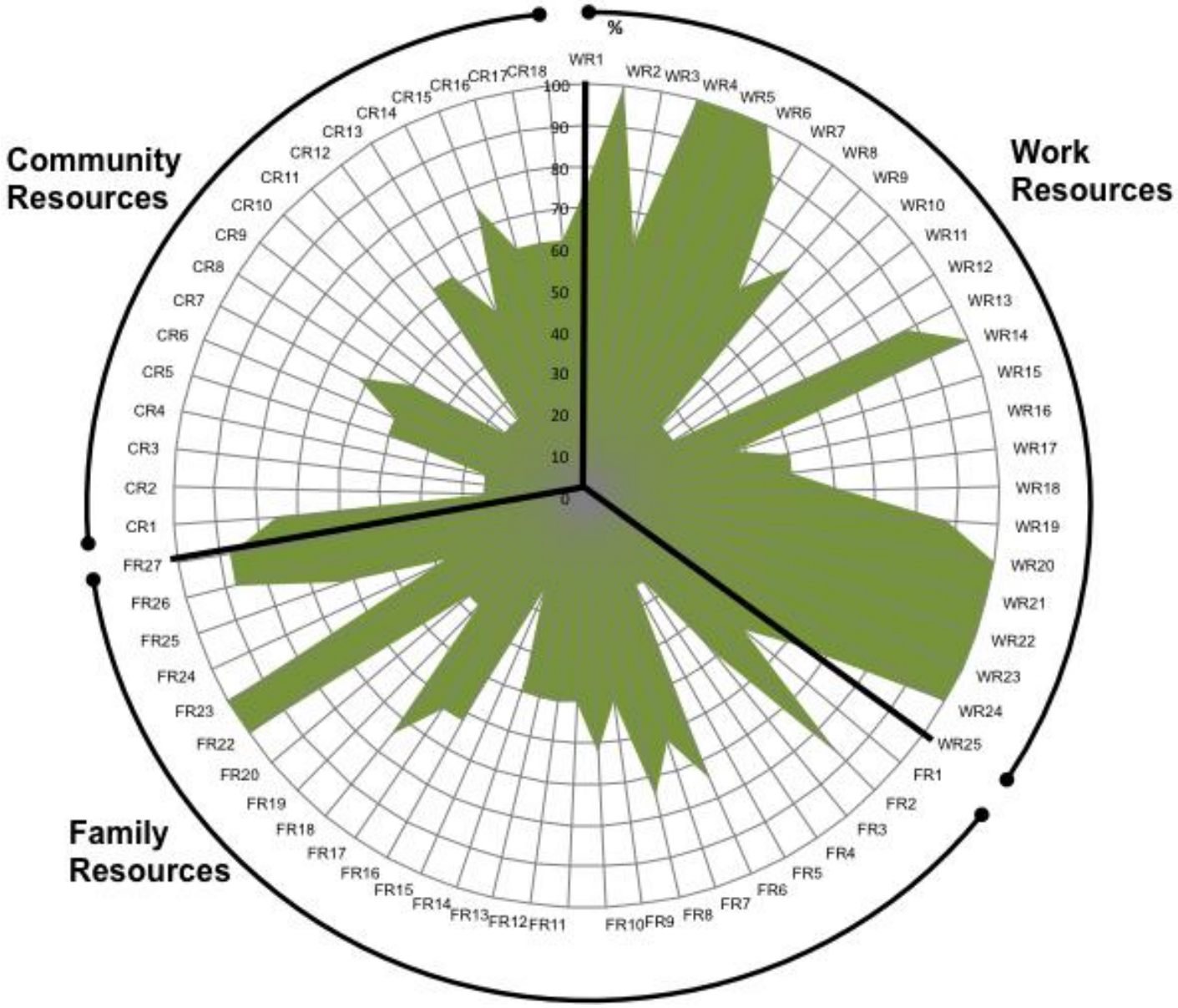

Figure 9-11. Resources considered important by members of group two to meet their high-ranked demands.

9.5.10.1 Support from work

Like group one, various forms of support provided by the organization were rated by members of group two as important in meeting their high ranked demands. Resources included time off work for family (WR13, n=7, 87.5%), time off work for personal reasons (WR14, n=8, 100%), emotional support from supervisor (WR19, n=77, 87.5%), emotional support from co-workers (WR20, n =8, 100%), information support from supervisor (WR21, n=8, 100%), information support from co-workers (WR22, n=8, 100%), practical support from supervisor (WR23, n=8, 100%), and practical support from co-workers (WR24, n=8, 100%). Members of this group generally felt supported by their organisation, and this was reflected in the comments provided by members. Sam, a site supervisor based onsite in the site office, explained how the support he received from his supervisor enabled trust and autonomy: "*I*

have a good relationship with my direct boss. There is trust and therefore autonomy". Jane, an administrator based in head office, explained that work was very supportive if she had to have time off work for personal reasons. Jane commented "*work is really good if I need to pop out, like for the dentist. And I've just finished a three year course and during that time I left (work) at 4.30pm to get there. Work was very supportive of my study*". Travis, a labourer, based onsite in direct construction, also explained that support from work was important for him. Travis commented "*I can have a voice, an opinion, it really is an open door policy with senior managers….and I can take time off for family when I need to*".

9.5.10.2 Work control

Resources relating to work control were considered important by members of this group in meeting their high-ranked demands. These resources included autonomy at work (WR1, n=6, 75%), and flexible work hours (WR7, n=7, 87.5%). Sam, a site supervisor based onsite in the site office, commented "*flexibility is important. I have flexibility now – if all the work is done I can leave at 3.30pm. On Saturdays I can come into the site office for two hours only*". Travis, a labourer based onsite in direct construction activity, commented "*I can choose to come in to work and do overtime…to fit it around my kids and family*". Some of the members who worked as labourers indicated that they did not have work control and that start and finish times were determined by the organization, however flexibility of start and finish times would be helpful so that family and health and fitness activities could be undertaken. While these members had little flexibility at work, they indicated that this did not cause a barrier to participating in activities outside of work. For example, Les, a labourer based onsite in direct construction activity, commented "*now the job is in wind down mode – not so busy as it has been, so I have been finishing at 3.30 rather than 5.30. But I go to the gym at either time so I'm not bothered*".

9.5.10.3 Satisfaction from work

The meaning that workers got from their work (WR5, n=8, 100%), pride in their work (WR6, n=8, 100%) and skill utilization at work (WR2, n=8, 100%) were considered important by all group members in enabling them to meet their high-ranked demands. Many members of this group were positive about their job and perceived that their work was significant and important, and that they were proud of their work participation and achievements. Sam, a site supervisor based onsite in the site office, commented "*working is a hobby for me. I love building and I get paid for it".* Jane, an administrator based in head office, commented "*I love work and I love a lot of pressure".* All members (n=13, 100%) regarded income from work as an important resource.

9.5.10.4 Support from family

Resources relating to support from family were considered important by members of this group in meeting their high-ranked demands. These included family cohesion (FR2, n=7, 87.5%), partner emotional support (FR6, n=6, 75%), partner practical support (FR8, n=6, 75%), in-house help with housework and chores (WR18, n=6, 75%), meaning from family (FR22, n=8, 100%), and pride in family (FR23, n=8, 100%). The majority of members (87.5%) indicated receiving help with household chores, and this was reflected in members' responses. Les, a labourer based in direct construction activity commented "*my partner does the washing throughout the week so it doesn't build up*". Travis, also a labourer based in direct construction activity commented "*my wife does all house work*". Members with dependent-aged children also indicated receiving support with childcare. Sam, a site supervisor based onsite in the site office, commented "*my wife is a great support. She used to work part time, at the moment she doesn't work. She looks after the kids*".

9.5.10.5 Time for self

Like group one, resources which provided time for self were considered important by members of group two in meeting their high ranked demands. Resources included time for time self (FR26, n=7, 87.5%) and time in physical activities (FR27, n=7, 87.5%). As this group is actively engaged in work, family, social activities, and fitness activities, this result could suggest that time for self may provide a time for members to relax and unwind in what is a busy schedule. Sam, a site supervisor based onsite in the site office, commented "*I pack a lot into my life*".

9.5.11 Summation of group two

Group two has a mean age of 40.63 years, and is primarily made of up males who work on average 55.00 hours per week. The group is mostly made up of parents with dependent-aged children. Family is the most important role with a mean score of 67.5%, and this group allocates 45.63% of their time to family and 50.63% of their time to work. This group is actively engaged in work, family, social activities and fitness. This group has a positive attitude towards multiple domain engagement, and does not appear to limit non-work activities due to work-based demands. Little work-based and home-based strain is experienced, and this group feels well supported from work and home. Like group one, resources required to meet high-ranked demands centre around support from work, work control, satisfaction from work, and support from family.

9.6 Group three

9.6.1 Demographic characteristics

Thirteen participants were associated with group three. Seven participants were male (53.8%) and six (46.2%) were female. Four (30.8%) of the participants lived alone, two (15.4%) lived with their partner, one (7.7%) lived with their partner and children, one (7.7%) lived with their children (single parent), two (15.4%) lived with their parents, and three (23.1%) lived with their friends or housemates. Of the 13 participants, six (46.2%) had no partner, one (7.71%) had a partner in part time employment, and five (38.5%) had a partner in full time employment. The majority of the group were salaried (n=11, 84.6%) and children-free (n=11, 84.6%). Five (38.5%) participants were located in head office, six (46.2%) were located onsite in the site office, and two (15.4%) were located onsite in direct construction. One participant had four children aged under 18 years, and one participant had two children aged 18 years or more. The demographic characteristics of group three are outlined in Table 9-8.

Table 9-8. Demographic characteristics of group three.

	N	%		N	%
Gender			**Work location**		
Male	7	53.8	On site in direct construction	2	15.4
Female	6	46.2	Onsite in site office	6	46.2
			Head office	5	38.5
Household status					
Live alone	4	30.8	**Parental status**		
Live with partner	2	15.4	Children	2	15.4
Live with partner and children	1	7.7	No children	11	84.6
Live with children (single parent)	1	7.7			
Live with parents	2	15.4	**No. of children <18**		
Live with friends or housemates	3	23.1	0	12	92.3
			1	0	0
Employment status of partner			2	0	0
No partner	6	46.2	3	0	0
Partner does not work	0	0	4	1	7.7
Partner in part time employment	1	7.7			
Partner in full time employment	5	38.5	**No. of children =>18**		
Missing data	1	7.7	0	12	92.3
			1	0	0
Type of pay			2	1	7.7
Salaried	11	84.6	3	0	0
Waged	2	15.4			

The mean age of participants of group three is 35.54 years (SD = 8.61 years). The average weekly work time of participants was 52.38 hours (SD = 8.78 hours), and the average weekly travel time was 6.65 hours (SD = 3.17 hours). These results are summarised in Table 9-9.

Table 9-9. Age, work hours and travel hours of group three.

Variable	Mean	SD
Age (years)	34.54	8.61
Weekly work time (hours)	52.38	8.78
Weekly travel time (hours)	6.65	3.17

9.6.2 Household duties

Members of group three spent on average of 9.38 hours per week (SD=4.95) on household duties. Three (23.1%) members received no help at all with household duties, two (15.4%) almost never received help, three (23.1%) seldom received help, one (7.7%) sometimes

received help, two (15.4%) frequently received help, and two (15.4%) received help all the time.

9.6.3 Childcare duties

For group three, 11 (84.6%) members did not have children and two (15.4%) indicated receiving no help at all. Of the members who had children, none of their children had special needs due to a physical, intellectual, emotional or behavioural disability.

9.6.4 Care duties for parents and relatives

Six (46.2%) members indicated not having elderly or ailing parents or relatives, five (38.5%) had no care duties, and two (15.4%) had a low level of care duties. In terms of help received, eight (61.5%) members indicated not having elderly or ailing parents or relatives, one (7.7%) received no help, one (17.7%) almost never received help, one (7.7%) sometimes received help, one (7.7%) frequently received help, and one (7.7%) received help all the time. In terms of amount of help, eight (61.5%) members indicated having no elderly or ailing parents or relatives, two (15.4%) members received no help, two (15.4%) received 1 - 5 hours per week, and one (7.7%) received more than 40 hours of help per week.

9.6.5 Responsibility for others

Four (30.8%) members of the group had little or no responsibility, five (38.5%) had below-average amount of responsibility, and four (30.8%) had an average amount of responsibility. The mean score was 2.00 (SD=0.81), which reflects a below average amount of responsibility for group three.

9.6.6 Role salience

For group three, family role salience was rated higher (mean=5.45, SD=0.64) than work role salience (mean = 4.70, SD=0.59), and community role salience (mean=4.04, SD=1.49). The results are outlined in Figure 9-12.

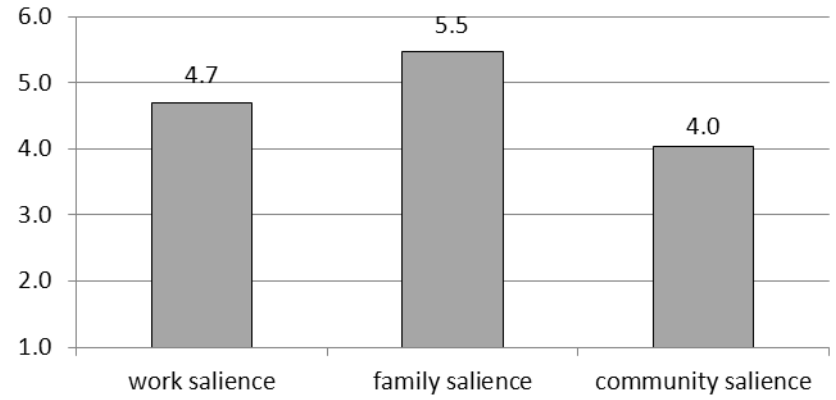

Figure 9-12. Mean scores of role salience for group three.

9.6.7 Role importance and time allocated to roles

Participants distributed 100 points into three categories (family, work, and community) according to importance in their life at the present time, and then according to how time is allocated in their life at the present time. Mean scores were calculated, as shown in Figure 9-13. For this group, family was rated as most important (mean=49.44, SD=14.06), followed by work (mean=33.61, SD=12.98), and community (mean=15.28, SD=9.57). This group allocated the most time to work (mean=54.17, SD=13.11), followed by family (mean=35.83, SD=15.64), then community (mean=10.91, SD=8.31).

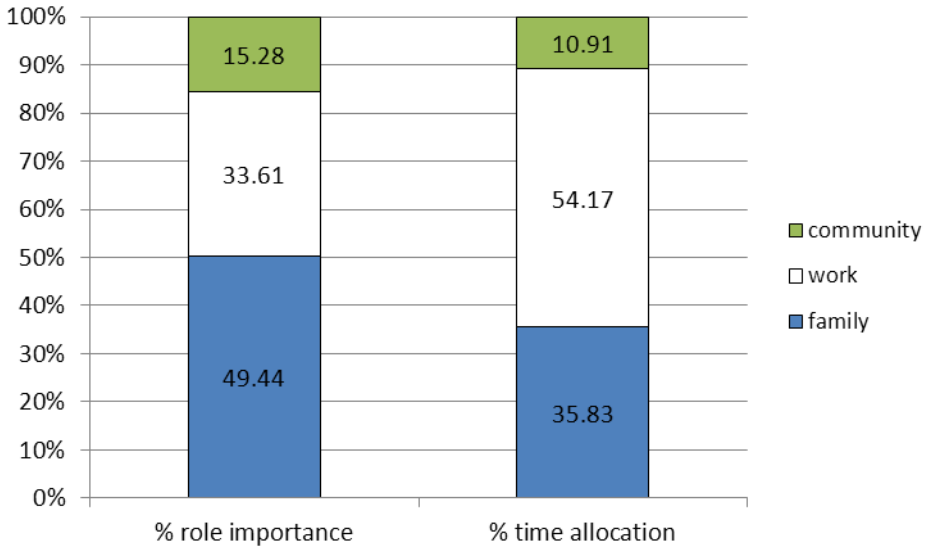

Figure 9-13. Mean scores of role importance and time allocated to roles for group three.

9.6.8 Segmentation preferences

The mean score for segmentation preference was 5.92 (SD=0.65) which suggests that this group has a high preference for segmenting work and family.

9.6.9 Demands experienced by members of group three

This section describes the ranking of demands for group three. Figure 9-14 summarises how members of group three experienced all of the demands arising from the work, family and community domains, ranging from a very great extent (7) through to no extent at all (1). In this figure, each code corresponds to a demand, for example, 'WD1' corresponds to 'time in paid work' which was experienced by this group to a very great extent. Each of the codes and their corresponding demands are outlined in more detail in Figure 9-15, which shows the configuration of demands representing the model Q sort for members of group three. Members of this group experienced a range of high demands originating from both the work and family domains. In contrast, community-based demands were generally experienced to a lower degree.

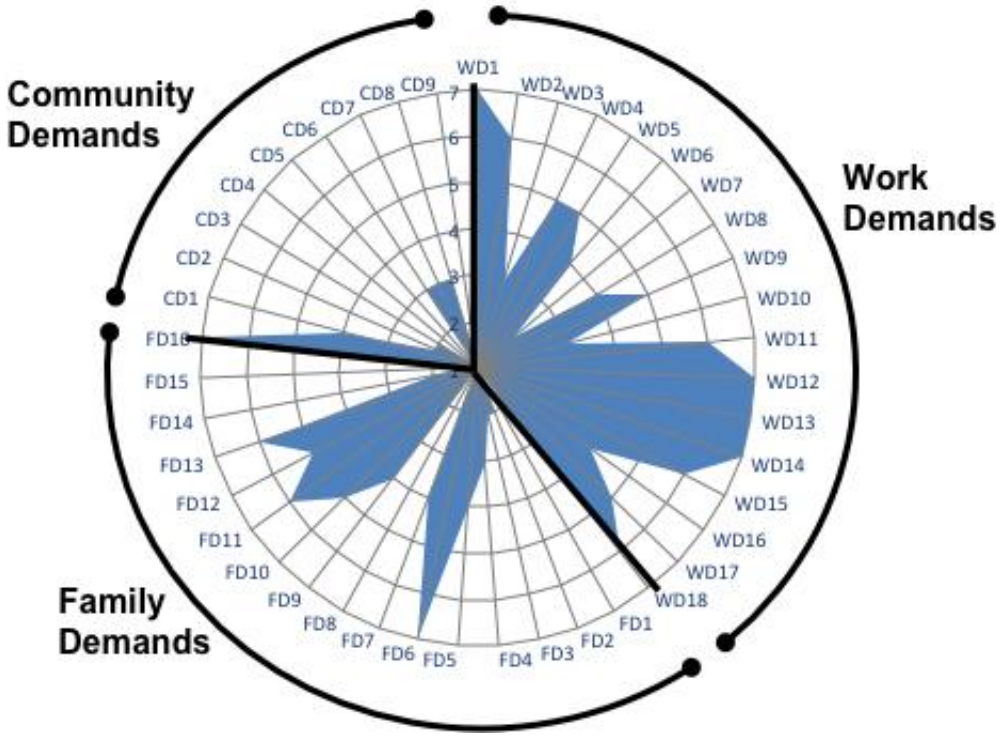

Figure 9-14 .Experience of demands arising from the work, family and community domains for group three.
(1=to no extent at all, 7=very large extent)

Experience of demands of this group is discussed according to the themes of: (i) workload and frequency, (ii) caring responsibilities; (iii) experience of home and family; and (vi) community engagement.

NO EXTENT AT ALL (1)					VERY LARGE EXTENT (7)	
CD4. hours and schedule of health, welfare and community organizations	FD2. time caring for your relatives children	CD6. limited or no access to public transport	WD16. interpersonal conflict at work	FD10. family activities at work	WD15. co-worker expectations	WD1. time in paid work
FD8. child with a disability	CD2. emotional strain in volunteering	WD10. physical strain at work	FD5. time caring for pets	WD5. overtime hours	WD2. commuting time	FD16. time in social activities
FD1. time caring for your children	FD3. time caring for your friends children	CD7. hours and schedule of self interest courses and groups	FD9. unfairness in household work	WD17. project characteristics	WD11. mental strain at work	WD12. industry expectations
CD5. hours and schedule of schools	CD3. time in religious and faith activities	FD4. time caring for relatives	FD7. household relationship conflict	WD4. work over load	FD11. health and fitness activities	FD6. time in household tasks
FD15. time supporting your grandchildren's activities	FD14. time supporting your children's activities	CD8. hours and schedule of training and education organizations	WD6. job insecurity	FD12. undertake formal training and education	WD18. undertake training and education for work	WD13. organizational expectations
CD9. undertaking parent-based pre-school and school related activities	WD7. overnight travel for work	WD3. non standard work schedule	WD8. work activities at home	WD9. emotional strain at work	FD13. participating in self-interest activities	WD14. supervisor expectations
			CD1. time allocated to volunteering			

Figure 9-15. Configuration of items representing the model Q sort for members of group three.

9.6.9.1 Workload and frequency

This group reported working on average 52.38 hours (SD = 8.78 hours). Demands relating to time spent in paid work were experienced by members of this group to a high extent. In particular, time in paid work (WD1) was experienced to a very large extent, and overtime hours (WD5) was experienced to a considerable extent. Members of this group indicated working long hours. Many, an administrator based in head office, commented "*I do overtime and long hours all the time"*. Neville, an administrator based onsite in the site office, commented "*a normal day for me is 7am – 6pmish*". Andrew, a supervisor based in direct construction activity, stated that a ten hour day was standard, and Alistair, a labourer based in direct construction activity explained that he usually worked 50 – 60 hours per week. Furthermore, this group experienced work overload (WD4) to a considerable extent, which would suggest that although long hours were worked, there was still not enough time to

complete assigned duties. Mental strain at work (WD11) was experienced by this group to a large extent, and emotional strain (WD9) was experienced to a considerable extent, and results suggest that this may be linked to long working hours and work overload. Arthur, a supervisor based onsite in direct construction activity, explained that some jobs required long hours to meet a tight deadline. In these instances pressure was high as there would most likely be a financial penalty if the deadline was not met.

This group experienced industry expectations (WD12), organizational expectations (WD13), and supervisor expectations (WD14) to a very large extent. Members of this group explained that long hours were driven by industry and organizational expectations. Pierce, an undergraduate based onsite in the site office, commented "*it's the industry's expectations, you put the hours in*". Pierce went on to explain that supervisor expectations of hours worked are driven by the industry. Chris, a supervisor working on site in the site office, also commented on long work hours and expectations of industry and organization: "*I work long hours and work on Saturday. Industry and organization expectations are linked together, as industry expectations drive organizational expectations like starting time onsite, long hours, and weekend work*".

This group reported spending on average 6.65 hours (SD = 3.17 hours) commuting to and from work. For this group, commuting time (WD2) was experienced to a large extent. Some salaried members currently located in head office explained that they moved between head office and project site offices, and this was dependent on the work the organization had at the current time. In contrast, labourers (blue collar workers) always followed the work and never went back to a base such as head office. For example, Alistair, a labourer based in direct construction activity, commented "*commuting time is dependent on the current job. Now in the morning, its 40 minutes. In the afternoon, one hour. It's the nature of industry. We follow the jobs, but that will impact on travel time*".

Undertaking training and education for work during work time (WR18) was experienced to a large extent by this group. Members of this group who were engaged in direct construction activity undertook first aid, plant, and occupational health and safety training. Other members were undertaking courses at TAFE, such as in estimating, while the member in an undergraduate position was completing his university degree. Neville, an administrator based onsite in the site office, felt pressured to continue learning and developing. Neville commented "*training is linked to industry expectations. Expected that you know a lot of stuff*".

9.6.9.2 Caring responsibilities

This group was primarily child-free (n=11, 84.6%) and had a low level of care responsibility for elderly parents and relatives. For the 'responsibilities for others' measure, this group had a below average amount of responsibility. A low level of caring responsibilities was also reflected through demand rankings, with most caring-related demands ranked to no extent at all through to a slight extent. For example, time caring for your children (FD1) and hours and schedule of schools (CD5) were experienced by members to no extent at all. For the two group members who had children, one member who was a single parent, indicated that his children were 18 years or older and were no longer dependent on him, while the other member indicated that his partner took responsibility for the children during work hours.

9.6.9.3 Experience of home and family

Members of group three spent on average of 9.38 hours per week (SD=4.95) on household duties, and indicated experiencing this demand (FD6) to a very high extent. Some of the members who lived alone indicated that cooking an evening meal after work was a big demand. Often these workers were tired after a long working day, and had no energy left to prepare a meal. Furthermore, these members did not have the support at home and grocery shopping, preparing the meal and cleaning up had to be done by them alone. Mary, an administrator based onsite in the site office, commented "*cooking every evening for one, late at night is a big demand for me*". Alistair, a labourer based in direct construction activity, commented "*I get home tired. Cooking for one is hard*". Arthur, a supervisor working onsite in direct construction activity, is a single parent with grown up children, explained that cooking meals after work was tedious. Arthur commented "*cooking meals – I do it because I have to, not because I want to*".

Unfairness in household work (FD9) was experienced by this group to some extent, and for some members this was related to their high level of time spent in household tasks. Anna, an administrator based in head office, explained that her housemate didn't do her share of household chores, therefore Anna picked up the slack. Mandy, an administrator based in head office, who lived with her boyfriend, commented "*I live with boyfriend but he doesn't do any housework unless asked. It's unfair*".

Outside of work, many of the group members engaged in social activities (FD16), health and fitness activities (FD11) and self-interest activities (FD13). Sally, a contracts administrator based in head office, indicated doing pilates two times per week, "*It's a social things as well because I know all of the people in the class*". Mandy, an administrator based in head office, played poker as a hobby every week. Neville, an administrator based onsite in the site office,

explained that he played sports after work with friends. Mary, an administrator based onsite in the site office, explained that her new year's resolution was to increase her health and fitness activities and is doing one activity every night, such as zumba, walking, or running. Alistair, a labourer based in direct construction activity, goes to gym a few times a week and visits his parents once a week.

9.6.9.4 Community engagement

This group rated community role salience (mean=4.04, SD=1.49) slightly below work role salience (mean = 4.70, SD=0.59), which suggests that this group considers that their community role is somewhat important. Members of group three were largely child-free and therefore were not engaged with the community through child and family based groups and services. However, time spent in volunteering (CD1) was experienced by this group to some extent. Some group members were actively engaged in volunteering activities, such as caring for disabled children. However, members indicated disappointment in their low level of engagement with the community. Mary, an administrator based onsite in the site office, explained that she didn't have time to engage in community based activities due to long working hours, but she would if she worked part time. Similarly, Sally, a contracts administrator based in head office, commented *"if I had time I would do more (community work). I'm a bit sad that all my community demands are ranked so low*". Arthur, a supervisor working onsite in direct construction activity, commented "*I feel guilty, I don't do anything in the community*".

9.6.10 Resources required to meet high-ranked demands

Participants indicated which resources would be helpful in meeting demands which were experienced to a considerable, large extent and very large extent. Results indicate that 63 out of 69 resources were rated by group members as 'important' to varying degrees, as shown in Figure 9-16. Six resources were considered not important by this group; childcare benefits provided by work (WR11), child care program (CR2), before and after school program (CR3), school holiday program (CR4), religious group information support (CR10), and religious group practical support (CR11).

Results are summarised in Figure 9-16, in which each resource is allocated a code on a scale ranging from zero % to 100%. For example, WR2 corresponds to skill utilization at work, which is considered important by all members (100%) in meeting their high ranked demands. Appendix 9h summarises the rating for each resource. Resources considered as most important in meeting high-ranked demands are discussed according to the themes of: (i) support from work; (ii) significance of work; (iii) work control; and (iv) time for self.

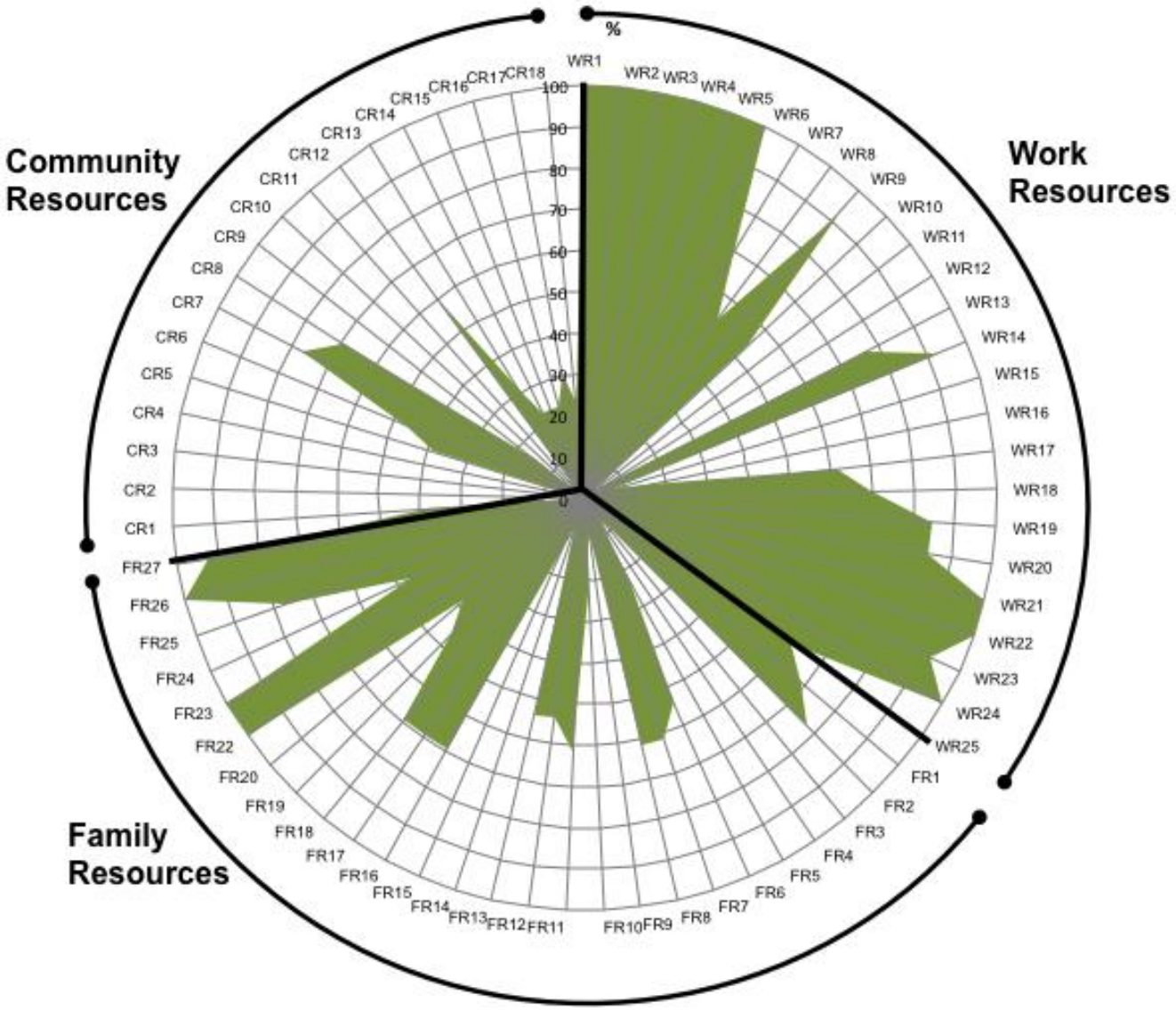

Figure 9-16. **Resources considered important by members of group three to meet their high-ranked demands.**

9.6.10.1 Support from work

Like group one and two, various forms of support originating from work were rated by members of group three as important in meeting their high ranked demands. Resources included time off work for family (WR13, n=10, 76.9%), time off work for personal reasons (WR14, n=12, 92.3%), emotional support from supervisor (WR19, n=11, 84.6%), emotional support from co-workers (WR20, n =11, 84.6%), information support from supervisor (WR21, n=13, 100%), information support from co-workers (WR22, n=13, 100%), practical support from supervisor (WR23, n=12, 92.3%), and practical support from co-workers (WR24, n=13, 100%). Anna, an administrator based in head office, explained that "*emotional and practical supports are important – I'm not currently getting these as I am isolated geographically at work and I often don't see my supervisor as he is either in meetings or out of the office*". Mary, an administrator based on site in the site office, commented "*I like to know I have*

support from my supervisor. Time off for personal reasons. I rely heavily on that". Sally, a contracts administrator based in head office, was new to the organisation and explained that support from senior managers was helpful in helping her to settle into her role: "*the organization has created an environment of support by nominating two people (supervisors) I can go to for help*". Pierce, an undergraduate based onsite in the site office, explained that support from co-workers was important to him especially as he was a junior and didn't have much industry experience: "*informational and emotional support from co-workers are really important*".

9.6.10.2 Significance of work

The meaning that workers got from their work (WR5, n=13, 100%), pride in their work (WR6, n=13, 100%), skill utilization at work (WR2, n=13, 100%), and work-related training and education (WR3, n=13, 100%) were considered important by all group members in enabling them to meet their high-ranked demands. For this group, undertaking training and education for work was experienced to a large extent, and members were generally motivated to participate in ongoing learning. For some members, work-related training and education (WR3) and skill utilization at work (WR2) and were linked, insofar as new work skills would be translated into skill utilization. Income from work (WR4, n=13, 100%) was considered by all members as an important resource. Like group one and two, members of group three explained that they worked hard but they got paid well.

9.6.10.3 Work control

Autonomy at work (WR1), which is the freedom for members to decide what is done on the job and how the job gets done, was considered important by all members (n=13, 100%) in meeting their high ranked demands. Having a rostered day off (WR9) was considered important by the majority of the group (n=12, 92.3%) in helping them to meet their high ranked demands. Members explained that working long days and often six days a week made it hard to carry out personal activities, and that a rostered day off (RDO) would assist. For example, Jake, a project engineer working onsite in the site office explained "*I don't have RDOs but it would help get stuff done as it's hard when we work every day*". Alistair, a labourer working in direct construction activity who received RDOs, commented "*we get 24 Mondays. Time to pay bills, service my car, get my haircut, stuff like that*". A compressed work week (WR17) was considered important by some members (n=8, 61.5%) however, some members explained that it would be almost impossible to compress a long working week into four days. For example, Jake, a project engineer working onsite in the site office, commented "*I considered a compressed work week. That would be four 12 hour days and one six hour day, but it would be too much as I also travel one hour each way to work*".

9.6.10.4 Time for self

Like group one and group two, resources which provided time for self were considered important by members of group three in meeting their high ranked demands. Resources included time for time for yourself (FR26, n=13, 100%) and time in physical activities (FR27, n=12, 92.3%). As this group is actively engaged in work, social activities, and fitness activities, this result could suggest that time for self may provide a time for members to relax and unwind in what is a busy schedule. For example, Sally, a contracts administrator based in head office, commented "*I would love to do some courses just for interest but I am time poor after work*". Mandy, an administrator based in head office, commented "*time for yourself is important. I don't get much time for myself at the moment".* While this group was primarily child-free, the household structure of members was diverse. Some members lived alone, some with their parents, and some with their partner. This result suggests that irrespective of living arrangement or parental status, all workers considered time for self to relax and unwind was an important resource in helping them to meet their high ranked demands.

9.6.10.5 Support from home, family and friends

Resources relating to support from home, family and friends were considered important by members of this group in meeting their high-ranked demands. These included family cohesion (FR2, n=10, 76.9%), meaning from family (FR22, n=13, 100%), and pride in family (FR23, n=13, 100%). Friend emotional support (FR16, n=9, 69.2) and friend practical support (n=9, 69.2%) were considered important by more members than partner information support (FR7, n=8, 61.5%) and partner practical support (FR8, n=8, 61.5%). This may be the case as almost half of the group (46.2%) indicated that they did not have a partner, so therefore called on their friends for support.

9.6.10.6 Ongoing learning

Unlike group one and group two, members of group three considered training and education facilities (CR7) which provided access to formal training and education facilities (n=10, 76.9%) and self-interest courses (CR8, n=9, 69.2%) as important. This group appeared to value ongoing learning as an important resource which could assist them to meet their high-ranked demands. Learning was both at a formal level and related to development of work skills, such as through university and TAFE, as well as on a personal level and related to interests and hobbies.

9.6.11 Summation of group three

Group three has a mean age of 34.54 years, and is made of up of both females and males who work on average 52.38 hours per week. Half of the group are partnered and half are single, and the group is mostly child-free, with little responsibility for others outside of work. Demands originating from work are experienced to a high extent, as are some household tasks. Group three is most similar to group one, however there are some fundamental differences. This group experiences child-related demands to no extent at all, whereas group one experiences child-related demands to some extent. Furthermore, this group is actively engaged in ongoing learning. Like group one, this group considered community as more important than group two and four, and allocated 10.91% of their time to community-related activities. Like group one and two, resources required to meet high-ranked demands centre around support from work, work control, satisfaction from work, and support from family.

9.7 Group four

9.7.1 Demographic characteristics of factor four

Four participants are associated with group four. Three participants (75%) are male and one (25%) is female. All participants live with their partner and children. One (25%) participant has a partner who does not work, two (50%) have a partner in part time employment, and one (25%) has a partner in full time employment. Three participants were salaried (75%) and one (25%) was waged. Two (50%) participants were based onsite in direct construction, and two (50%) were located in head office. All participants had children. One (25%) had one child under 18 years, one (25%) had two children under 18 years, and one (25%) had three children under 18 years. One (25%) participant had two children aged 18 years or older. The demographic characteristics of group four are outlined in Table 9-10.

Table 9-10. Demographic characteristics of group four.

	N	%		N	%
Gender			**Work location**		
Male	3	75	On site in direct construction	2	50
Female	1	25	Onsite in site office	0	0
			Head office	2	50
Household status					
Live alone	0	0	**Parental status**		
Live with partner	0	0	Children	4	100
Live with partner and children	4	100	No children	0	0
Live with children (single parent)	0	0			
Live with parents	0	0	**No. of children <18**		
Live with friends or housemates	0	0	0	1	25
			1	1	25
Employment status of partner			2	1	25
No partner	0	0	3	1	25
Partner does not work	1	25			
Partner in part time employment	2	50	**No. of children =>18**		
Partner in full time employment	1	25	0	3	75
			1	0	0
Type of pay			2	1	25
Salaried	3	75	3	0	0
Waged	1	25			

The mean age of participants of group four was 40.00 years (SD = 4.24 years). The female member of this group worked on a part time basis, and reported working on average 27 hours per week while all other members worked on a full time basis. Including the member who worked on a part time basis, the average weekly work time of members was 46.00 hours (SD = 13.68 hours). By excluding the part time worker, the average weekly work time increased to 52.33 hours (SD=6.35 hours). With the inclusion of the part time worker, the average weekly travel time was 9.87 hours (SD = 5.51 hours). By excluding the part time worker, the average travel time is 12.16 hours (SD=3.75 hours). Travel and work hours of group four are summarised in Table 9-11.

Table 9-11. Weekly work hours and travel hours of group four.

Variable	All members		All full time members*	
	Mean	SD	Mean	SD
Weekly work time (hours)	46.00	13.68	52.33	6.35
Weekly travel time (hours)	9.87	5.51	12.16	3.75

* Calculation excludes part time member

9.7.2 Household duties

Members of group four spent on average of 10.13 hours per week (SD=7.91) on household duties, which was the highest of all groups. In relation to help received, one (25%) member frequently received help, two (50%) received help almost all the time, and one (25%) received help all the time.

9.7.3 Childcare duties

For group four, one (25%) member received no help at all with childcare duties, one (25%) seldom received help, and two (50%) frequently received help. In terms of amount of help, two members (50%) received no help, one (25%) received 1 – 5 hours per week, and one (25%) received 31 – 40 hours per week. None of the members had children with special needs due to a physical, intellectual, emotional or behavioural disability.

9.7.4 Care duties for parents and relatives

In response to the three items regarding care duties for parents and relatives, all members of this group indicated having no ailing parents or relatives.

9.7.5 Responsibility for others

One (25%) member of the group indicated having little or no responsibility for others, one (25%) had below-average amount of responsibility, and two (50%) had above average responsibility for others. The mean score was 2.75 (SD=1.50), which reflects a below average to average amount of responsibility for group four.

9.7.6 Role salience

For group four, family role salience was rated higher (mean=6.43, SD=0.42) than work role salience (mean = 4.31, SD=0.82), and community role salience (mean=2.93, SD=1.08). The results are outlined in Figure 9-17.

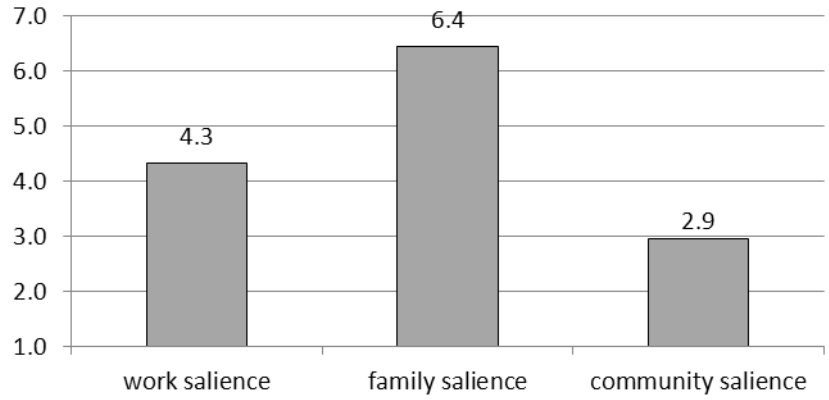

Figure 9-17. Mean scores of role salience for group four.

9.7.7 Role importance and time allocated to roles

Participants distributed 100 points into three categories (family, work, and community) according to importance in their life at the present time, and then according to how time is allocated in their life at the present time. Mean scores were calculated, as shown in Figure 9-18. For this group, family was rated as most important (mean=52.00, SD=13.26), followed by work (mean=42.50, SD=14.43), and community (mean=5.50, SD=3.31). This group allocated the most time to work (mean=52.50, SD=22.17), followed by family (mean=44.75, SD=19.24), then community (mean=2.75, SD=4.85).

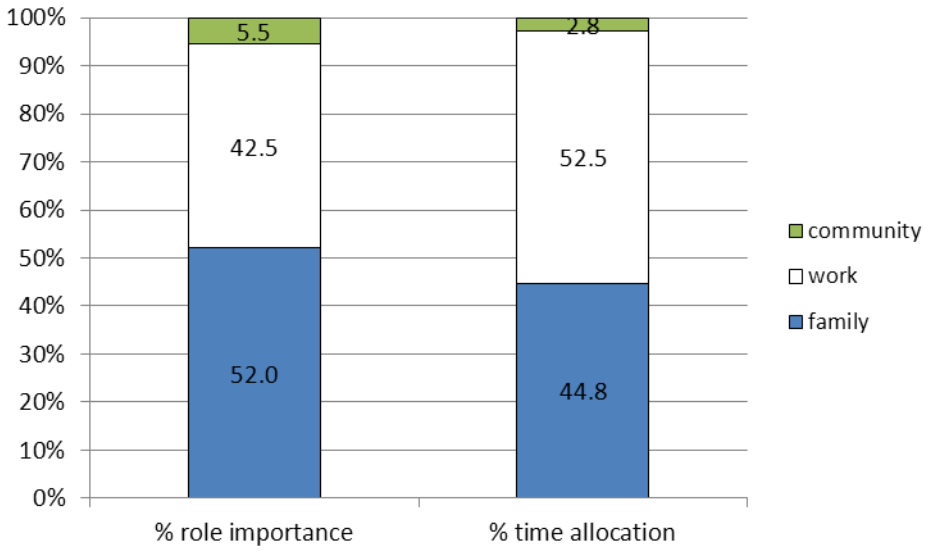

Figure 9-18. Mean scores of role importance and time allocated to roles for group four.

9.7.8 Segmentation preferences

The mean score for segmentation preference was 4.93 (SD=1.24) which suggests that this group has a medium preference for segmenting work and family.

9.7.9 Demands experienced by members of group four

The following section describes the ranking of demands for group four. Figure 9-19 summarises how members of this group experienced all of the demands arising from the work, family and community domains, ranging from a very great extent (7) through to no extent at all (1). In this figure, each code corresponds to a demand, for example, 'WD1' corresponds to 'time in paid work' which was experienced by this group to a very great extent. Each of the codes and their corresponding demands are outlined in more detail in Figure 9-20, which shows the configuration of demands representing the model Q sort for members of group four. Members of this group experienced a range of high demands originating from both the work and family domains. In contrast, community-based demands were generally experienced to a lesser degree.

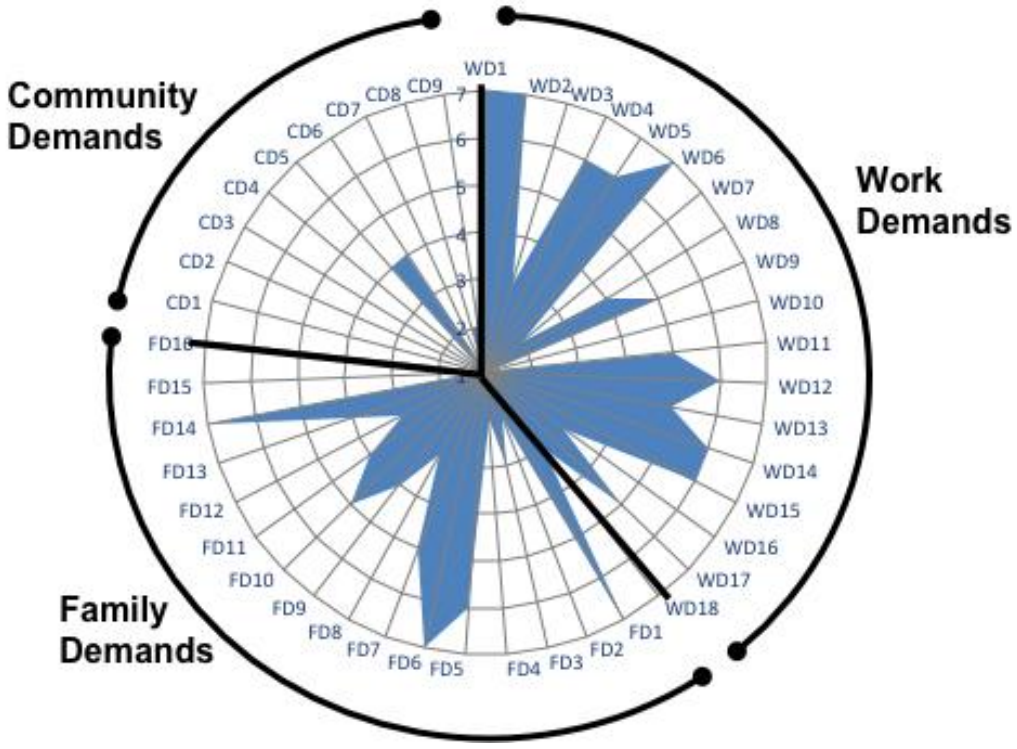

Figure 9-19. Experience of demands arising from the work, family and community domains for group four.
(1=to no extent at all, 7=very large extent)

Experience of demands of this group is discussed according to the themes of (i) workload and frequency; (ii) experience of home and family; (iii) strain and conflict; and (vi) community engagement.

NO EXTENT AT ALL (1)						VERY LARGE EXTENT (7)
CD7. hours and schedule of self interest courses and groups	WD7. overnight travel for work	WD16. interpersonal conflict at work	FD13. participating in self-interest activities	WD9. emotional strain at work	WD5. overtime hours	WD2. commuting time
CD1. time allocated to volunteering	CD8. hours and schedule of training and education organizations	WD18. undertake training and education for work	CD5. hours and schedule of schools	WD17. project characteristics	FD5. time caring for pets	WD1. time in paid work
WD10. physical strain at work	FD4. time caring for relatives	FD8. child with a disability	WD8. work activities at home	WD13. organizational expectations	WD4. work over load	FD14. time supporting your children's activities
CD2. emotional strain in volunteering	CD9. undertaking parent-based pre-school and school related activities	FD12. undertake formal training and education	FD9. unfairness in household work	FD7. household relationship conflict	WD12. industry expectations	FD1. time caring for your children
CD3. time in religious and faith activities	FD2. time caring for your relatives children	FD3. time caring for your friends children	CD6. limited or no access to public transport	FD10. family activities at work	WD15. co-worker expectations	FD6. time in household tasks
FD15. time supporting your grandchildren's activities		WD3. non standard work schedule	FD16. time in social activities	WD11. mental strain at work	WD14. supervisor expectations	WD6. job insecurity
CD4. hours and schedule of health, welfare and community organization's			FD11. health and fitness activities			

Figure 9-20. Configuration of items representing the model Q sort for members of group four.

9.7.9.1 Workload and frequency

This group reported working on average 46.00 hours (SD = 13.68 hours), and spending on average 9.87 hours (SD=5.51 hours) per week commuting to and from work. While all other groups ranked time in paid work (WD1) as their highest demand, this group ranked commuting time (WD2) as their highest demand, followed by time in paid work. Like other groups, members of this group who worked on site explained that commuting time varied according to where the project was located. For members based in head office, travel time was more constant and work location did not vary. While this demand related to commuting 'time', some members explained that driving to and from work was stressful and that there

was a strain element associated with this demand. The stress of commuting contributed to its high demand ranking. Paul, a labourer based onsite in direct construction activity, found driving in peak hour so stressful that he preferred to use public transport, "*I travel one hour and 30 minutes each way, and I take the train, then a connecting bus. I don't like to drive during peak times. If I do I get home exhausted from driving*". Along with time in paid work (WD1), overtime hours (WD5) was also experienced by members to a large extent. Members of this group acknowledged that hours worked was driven by industry and organizational expectations. Both of these demands (WR12 and WD13) were ranked high. Brent, an estimator based in head office, commented "*my work place agreement says 40 hours per week of work. But it's expected that I will put in the hours to get the job done*". Like other groups, work overload (WD4) was experienced to a large extent by this group, and this was driven by industry and organizational expectations of long working hours and tight deadlines.

9.7.9.2 Experience of home and family

Members of group four experienced home and family demands to a very large extent. These included caring duties as well as household duties. Members of group four spent on average 10.13 hours per week (SD=7.91) on household duties, and indicated experiencing this demand (FD6) to a very high extent. Time supporting children's activities (FD14) and time caring for children (FD1) were demands which were experienced by this group to a very large extent. Of the four members of this group, three members had partners who either did not work or worked part time. Some members felt pressured by their partner to participate in child care duties. For example, Brent, an estimator based in head office, commented "*I get home then I do a 'tag' team with my wife. My wife hands over the children to me which is hard after I have had a hectic and long day at work. I don't get time to myself, until 11pm. There is social and community expectation to participate and be involved and engaged with family… its an added pressure*". Another member of the group worked part time, while her partner worked on a full time basis. This member described how she juggled work, child care, and housework. Time caring for pets (FD5) was experienced by this group as a large extent, which was higher than any other group. For one member, his responsibility was to walk the family's dog on a daily basis. After a long and tiring day at work, along with taking an active role in childcare and household tasks after work, there was little time left for anything else. Having to walk the dog felt like an added pressure for this member.

9.7.9.3 Strain and conflict

Ranking of demands suggested that members of group four experienced high levels of strain and conflict originating from both the work and family domains. Job insecurity (WD6) was

experienced to a very large extent. Members indicated feeling under pressure to maintain their jobs in order to support their family. Paul, a labourer based in direct construction activity, commented "*I can't lose my job. If I lose my job I can't feed my family. It creates stress. If I lose my job, I feel like I am failing as a parent. It puts a lot of pressure on me*". Similarly, James, a supervisor based onsite in direct construction activity, commented "*If I don't have a job then I can't support my family*". There was also a perception by some members that they had to work hard in order to maintain their job. Brent, an estimator based in head office, explained that the industry and associated job market was competitive. Brent commented "*I have to work hard to keep my job. There is always someone waiting in line for a job like this*". James, a supervisor based onsite in direct construction activity, commented "*we have to fight for our job. If we don't perform we are out*".

Members experienced emotional strain at work (WD9) and mental strain at work (WD11) to a considerable extent. This was largely driven by long working hours, tight deadlines, and the unplanned nature of projects (WD17). In relation to projects and meetings deadlines, Brent, an estimator based in head office, commented "*there are expectations to do what is required to get the job done. If that means working long hours or picking up a different task then that's what I'll do. I have a work ethic that I will do whatever it takes to get across the line*". Both co-worker expectations (WD15) and supervisor expectations (WD14) were also experienced by this group to a large extent. In particular, some members felt pressure from co-workers to participate in after-work social activities, however this was often not possible due to family demands. Brent, an estimator based in head office, commented "*there are expectations of social interaction at work, for example drinks after work. I feel like there's pressure to attend. I feel like some people don't appreciate that I also have demands outside of work*".

Along with high levels of strain originating from the work domain, members of this group experienced strain originating from home. Household relationship conflict (FD7) was experienced to a considerable extent, and unfairness in household work (FD9) was experienced to some extent. Amy, who worked on a part time basis in head office, explained how she maintained primary carer responsibility of her young child, and still did most of the housework. Brent, an estimator based in head office, commented "*I would like more down time just relaxing, but don't often get that at home because it's structured. Weekends are always busy, and run to a tight schedule. Feels like home is run like a business. It's regimented and planned. Be here at this time, be there at that time, lots of planning and watching the clock*".

9.7.9.4 Community engagement

This group rated community role salience (mean=2.93, SD=1.08) somewhat lower than work role and family role salience, which suggests that this group considers that their community role is relatively unimportant. This was reflected through the ranking of community demands. The majority of demands originating from the community were ranked as no extent at all or to almost no extent. For example, time allocated to volunteering (CD1) was experienced to no extent at all by this group, and undertaking parent-based pre-school and school related activities (CD8) was experienced to almost no extent. Hours and schedule of schools (CD5) was experienced to some extent by members. Given their family-based demands, this group did not have the time to participate in community activities outside of work time.

9.7.10 Resources required to meet high-ranked demands

Participants indicated which resources would be helpful in meeting demands which were experienced to a considerable, large extent and very large extent. Results are summarised in Figure 9-21, and indicate that 58 out of the 69 resources were rated by group members as 'important' to varying degrees. Eleven resources were considered as not important by all members of this group; eldercare benefits (WR12), friend support for eldercare (FR15), relative help with household work and chores (FR19), child care program (CR2), school holiday program (CR4), purchased services such as house cleaning, gardening (CR5), self-interest courses (CR8), religious group emotional support (CR9), religious group information support (CR10), religious group practical support (CR11), and meaning from community (CR14). Some members perceived that resources considered not important at the present time may be important in the future. Resources considered as important in meeting high-ranked demands are discussed according to the themes of: (i) support from work; (ii) significance of work; (iii) work control; (iv) support from home, family and friends; (v) time for self. Appendix 9i summarises the rating for each resource.

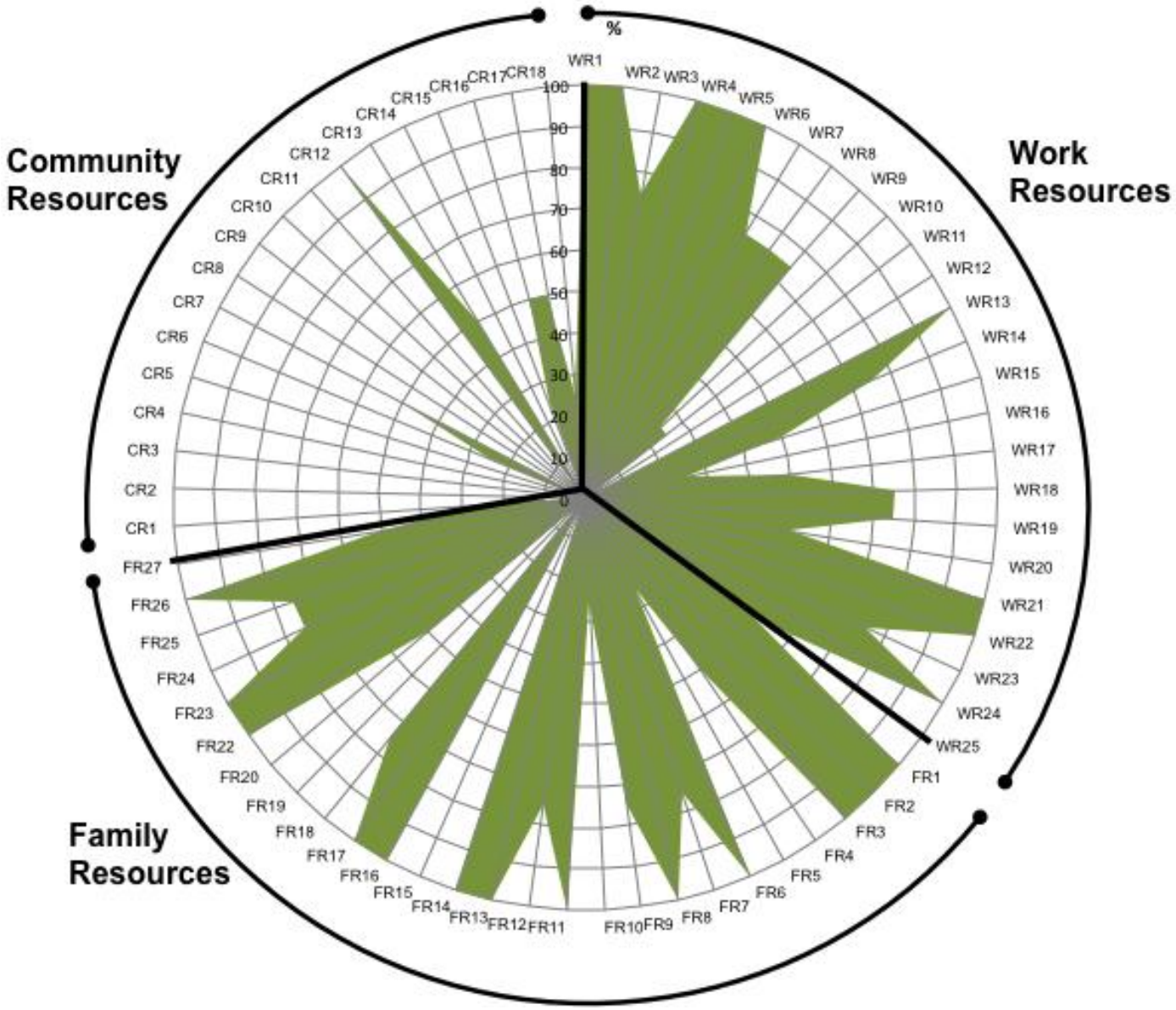

Figure 9-21. Resources considered important by members of group four to meet their high-ranked demands.

9.7.10.1 Support from work

Like group one, two and three, various forms of support originating from work were rated by members of group four as important in meeting their high ranked demands. Resources included time off work for family (WR13, n=4, 100%), time off work for personal reasons (WR314, n=3, 75%), supportive work-life culture (WR18, n=3, 75%), emotional support from supervisor (WR19, n=3, 75%), information support from supervisor (WR21, n=4, 100%), information support from co-workers (WR22, n=4, 100%), practical support from supervisor (WR23, n=3, 75%), and practical support from co-workers (WR24, n=4, 100%). Members of group four considered that support from work was important in meeting both family and work based demands, and this was the case as all members of this group had children under the age of 18 years. Paul, a labourer based on site in direct construction activity, commented:

"*currently I get great support from my boss. He supports me if I need to take time off for family reasons, and he will even ask me about it the following day*".

9.7.10.2 Significance of work

The meaning that workers got from their work (WR5, n=4, 100%), pride in their work (WR6, n=4, 100%), and skill utilization at work (WR2, n=4, 100%) were considered important by all group members in enabling them to meet their high-ranked demands. Income from work (WR4, n=13, 100%) was also considered by all members as an important resource. While members of group one, two and three explained that they worked hard but they got paid well, this group somewhat differed. For this group, job insecurity and the inability to provide for the family was experienced as a very high demand. Therefore, income was considered important as it was a means of supporting family.

9.7.10.3 Work control

Autonomy at work (WR1), which is the freedom for members to decide what is done on the job and how the job gets done, was considered important by all members (n=4, 100%) in meeting their high ranked demands. The majority of members also perceived that flexible work hours (WR7, n=3, 75%), flexible work schedule (WR8, n=3, 75%) and having a rostered day off (WR9, n=3, 75%) were important in helping to meet demands outside of work, such as caring for children and attending to household tasks.

9.7.10.4 Support from home, family and friends

Resources relating to support from family were considered important by members of this group in meeting their high-ranked demands. These included family problem solving (FR1, n=4, 100%), family cohesion (FR2, n=4, 100%), meaning from family (FR22, n=4, 92%), and pride in family (FR23, n=4, 88%).

Support from home, family and friends required to meet demands were far greater for this group compared to all of the other groups. For this group, support from partner, relatives and friends were all considered important in assisting to meet demands considered high. In order to meet childcare responsibilities, important resources included parental time-support for care of children (FR3, n=4, 100%), relative support for childcare (FR9, n=3, 75%), and friend support for childcare (FR14, n=4, 100%). For members of this group, three out of four partners either worked on a full time or part time basis, and therefore support from relatives and friends was considered helpful in enabling this group to meet both work and family demands. For example, Amy, an administrator based in head office, worked part time and

her partner worked full time. While she was working her husband's parents took on childcare duties.

In terms of emotional support, this group considered partner emotional support (FR6, n=4, 100%), relative emotional support (FR11, n=4, 100%), and friend emotional support (FR16, n=4, 100%) to be important. In terms of information support, this group considered partner information support (FR7, n=3, 75%), relative information support (FR12, n=3, 75%), and friend information support (25, n=3, 75) to be important. And in terms of practical support, partner practical support (FR8, n=4, 100%), relative practical support (FR13, n=4, 100%), and friend practical support (FR17, n=4, 100%) were considered important. In-house help with household work and chores (FR18, n=3, 75%) was also considered important.

9.7.10.5 Time for self

Like the other groups, resources which provided time for self were considered important by members of group four in meeting their high ranked demands (FR26, n=4, 100%).
As this group reported experiencing work and family demands to a high extent, they had little time for themselves to relax and unwind.

9.7.11 Summation of group four

Group four has a mean age of 40.00 years. One of the members of the group worked on a part time basis and three members worked on a full time basis. The mean working hours of the full time members was 52.33 hours per week. All group members have children less than 18 years, and live with their partner and children. Like group two, this group is engaged in work and family, and experiences high demands from both work and family. However, unlike group two, this group experiences a high level of stress from work and family, and has little time left for other activities such as community. This group appears to have little engagement with community due to time constraints, and considered community as having little importance at this time. Like the other groups, resources required to meet high-ranked demands centre around support from work, work control, satisfaction from work, and support from family. In contrast to the other groups, this group considered support from home, family and friends as important to a far greater extent in meeting high-ranked demands.

9.8 Summary

This Chapter outlined the results of the research and described how each of the four groups experienced demands, and what resources these groups required to meet these demands.

The Chapter also outlined role importance and segmentation preferences for each of the four groups. The next Chapter will discuss the results of the research.

10 Chapter Ten: DISCUSSION

10.1 Introduction

The research sought to explore the demands and resources of workers in the Australian construction industry through the application of an innovative methodology, and to develop a work-life fit model which applied a demands and resources framework. Four questions were developed as a basis from which to frame the research:

1. **What is the underlying structure of work-life fit?**
    a. What demands and resources are associated with work-life fit in the construction industry?
2. **How do demand-resource profiles differ between workers?**
    a. How does life stage influence the configuration of demand-resource profiles?
    b. How do the demand-resource profiles of white collar (salaried) and blue collar (waged) workers differ?
3. **How do individual attributes influence demand-resource profiles?**
    a. How does role importance influence the configuration of demand-resource profiles?
    b. How does segmentation-integration preference influence the configuration of demand-resource profiles?
4. **To what extent is Q Methodology a suitable methodology with which to explore the work-life experience of workers of the construction industry**?

The previous Chapter outlined the results of the research. The research has demonstrated that Australian construction workers can be classified into four broad groups according to their work, family and community demand profiles. Results indicate that the construction workforce is not a homogenous workforce. Instead, the demands and resources associated with each of the four groups emphasises the heterogeneous nature of the construction workforce. This Chapter discusses the results of the research and considers them in the context of the research questions. Following this, a new work-life fit model is presented.

10.2 Research question one

The first research question sought to explore the demands and resources which were associated with the work-life fit of workers of the Australian construction industry. This section considers the demands and resources experienced by the four groups. This section also discusses how the demands and resources function within a systems framework. Life

stage, job type, role importance, and segmentation-integration preference were found to influence the configuration of demands and resources of the four groups. These findings are addressed at a later stage of the Chapter, in response to question two (Section 10.3) and question three (Section 10.4).

10.2.1 Time-based demands

Results demonstrated that there was no linear relationship between the number of hours allocated to a demand and to what level that demand was experienced as stressful. Instead, demands were considered in the context of one another, and this contributed to the meaning attributed to each demand. For all groups, time spent at work was substantially higher than time spent in commuting and time spent in household tasks, as shown in Figure 10-1. However, the results indicated that time spent in household tasks and commuting were experienced as a high to very high demand for all groups, as shown in Figure 10-2. For example, group three reported average weekly work hours of 52.28 and spending on average 9.38 hours per week in household tasks, and both demands were experienced to a very high extent. Therefore, while spending 9.38 hours per week in household duties on its own may be perceived as a minor demand, the meaning attributed to the experience of that demand was altered when it was considered in the context of other demands. In explaining this finding, participants indicated that they were tired after a long work day, and had no energy left to undertake household tasks such as prepare a meal. In this context, cooking was perceived as a negative demand: "*cooking every evening…late at night is a big demand for me*". This suggests that a demand-to-demand interactional process took place, whereby the condition of one demand influenced the condition of another demand. In this case, there was an interaction between a demand originating from the work domain (long work hours) and a demand originating from the family domain (household chores). This finding is consistent with Lazarus and Folkman (1984), who suggest that the timing of an event may have an impact upon whether the event is experienced as positive, stressful, or irrelevant. For example, if a demand occurs in isolation it may be considered neutral, or even irrelevant. However, if that same demand occurs within the context of other demands, the demand may be experienced as negative. Lazarus and Folkman (1984, p.108) contend that "*the timing of an event sheds light on puzzling questions as to why events that presumably most people welcome…..or events considered bothersome, can take on a great significance, or conversely, why normally distressing events do not take on major significance*".

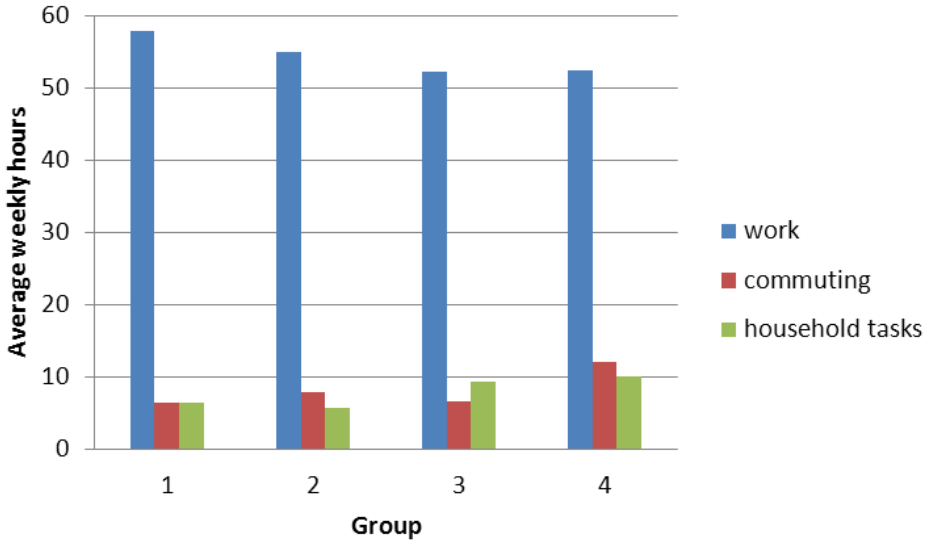

Figure 10-1. Average weekly time spent on work, commuting, and household tasks for all groups.

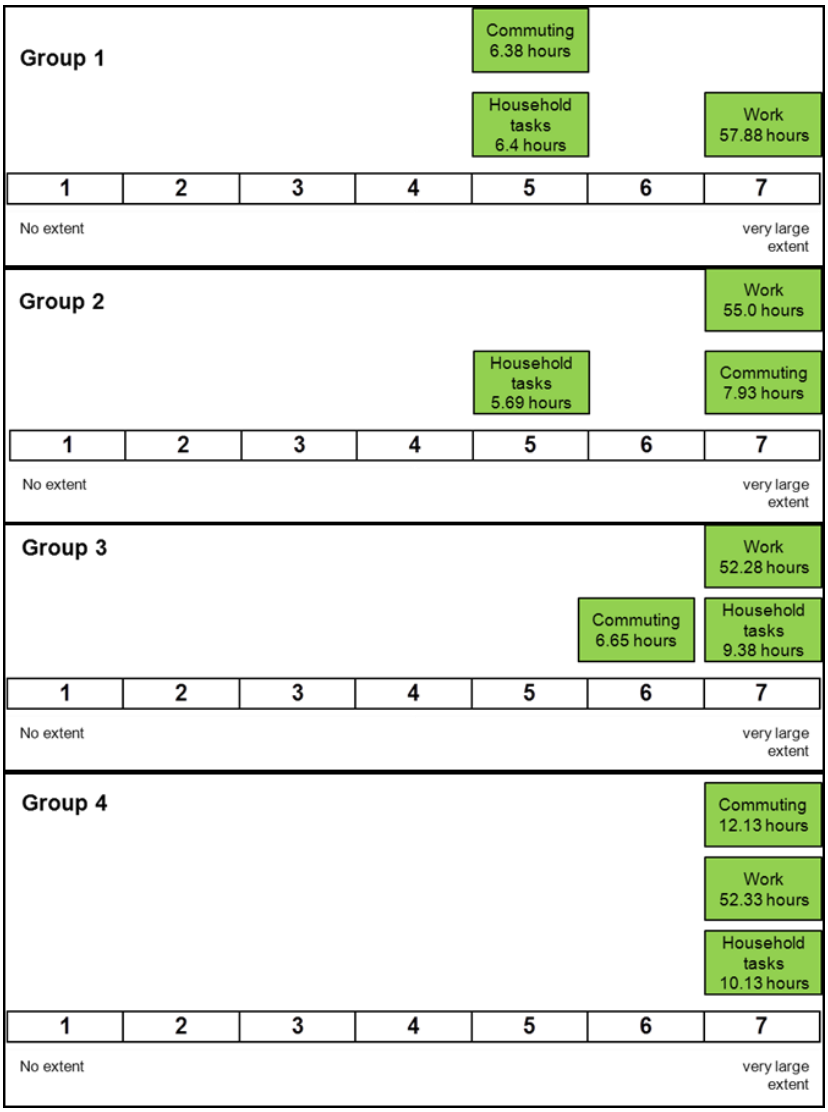

Figure 10-2. Level of experience attributed to time-based demands.

Future research which investigates individual's experience of demands should consider demands within a systems framework. Such an approach will facilitate a deeper understanding of demands, and how they are experienced by individuals. Findings of this research indicate that one demand can interact with another demand through a permeable boundary. The concept of a permeable boundary is applied to the work-life fit model, which considers that each demand experienced by an individual does not occur in isolation from other demands. For example, demand A (such as work hours) interacts with demand B (such as household chores) which results in the meaning attributed to demand B being altered. This interaction is shown in Figure 10-3. Within a system, demands are inherently connected, and this relationship is shown in Figure 10-4. The connection results in an interaction, in which the conditions of one or both of the demands are altered due to their interdependent relationship. Given the subjectivity of experience, it is expected that the meaning attributed to the interaction between demands will differ according to individuals. Subjectivity of experience is further explored in Section 10.2.4 of this Chapter.

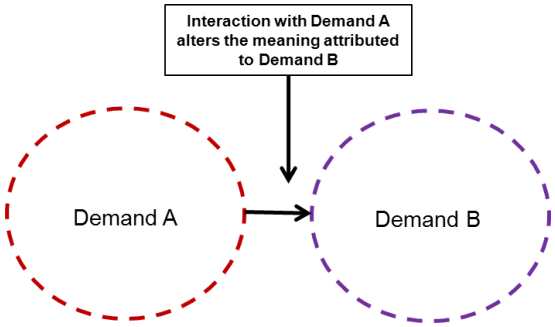

Figure 10-3. The interaction of demands.

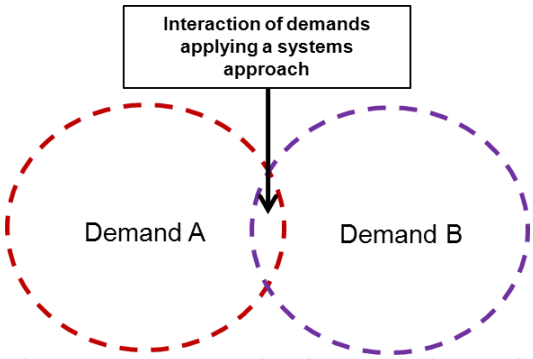

Figure 10-4. Interaction between demands which applies a system approach.

The ecological systems framework (Bronfenbrenner, 1979) refers to each domain as a microsystem. The experience of a demand in one microsystem can be influenced and shaped by the experience of a demand in another microsystem. In considering the experience of demands, it is imperative that the complex nature of interactions between microsystems is considered (Pocock *et al*. 2012; Voydanoff, 2007). Various conceptual models of work-life fit have acknowledged the dynamic process in which individual's

demands and resources will change in response to changes in work, home and community demands and resources (Barnett, 1998; DeBord *et al*. 2000; Moen *et al*. 2008; Teng and Pittman, 1996; Voydanoff, 2007). To date, however, little work has occurred which seeks to explore how demands and resources actually interact within a dynamic system. The findings of this research, therefore, contribute to conceptual models of work-life fit by demonstrating how demands can interact across microsystems, such that the conditions and meanings of demands are influenced, altered or minimised. While this section focused on the interaction between demands, it is also acknowledged that demands interact with resources, such that the experience attributed to the demand is altered. The way in which demands interact with resources is considered in Section 10.2.3 of this Chapter.

10.2.2 Interaction within the microsystem

The previous section described how demands interacted across microsystems, such that they were considered as spanning across domain boundaries (Voydanoff, 2007). Results also suggested that demands interacted within microsystems, resulting in the creation of new demands, or altering the way in which the second demand was experienced. Within the construction industry, it is possible that some demands may operate as 'influencers' while others may act as 'creators'. Demands which operate as 'influencers' have a major impact on the conditions of the interdependent demand, and it is suggested that if the conditions of the influencing demand change, so too will the conditions of the interdependent demand. In contrast, demands which operate as 'creators' generate a new demand and shape the conditions of that demand. It is suggested that if the 'creator' is altered or removed, then the resultant demand will also be removed. For example, groups one, three and four indicated that work overload created mental strain and emotional strain at work. Work overload was influenced by project characteristics, particularly when factors such as program changes, program acceleration, and unplanned activities occurred. This interaction is shown in Figure 10-5. Another interaction was indicated by group one and group three, whereby the construction industry's expectation of long and irregular work hours had an influence upon organizational expectations of work hours. Organizational expectations then created a long work hours culture. Long work hours then influenced the likelihood of overtime hours. This interaction is shown in Figure 10-6.

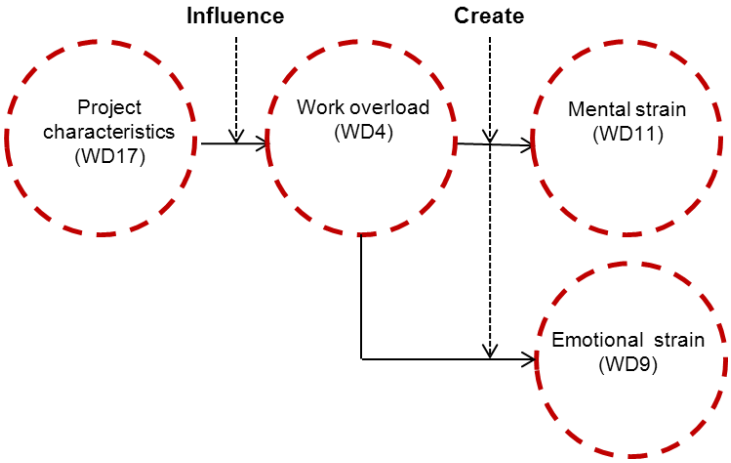

Figure 10-5. Example of how demands within the work microsystem create strain-based demands.

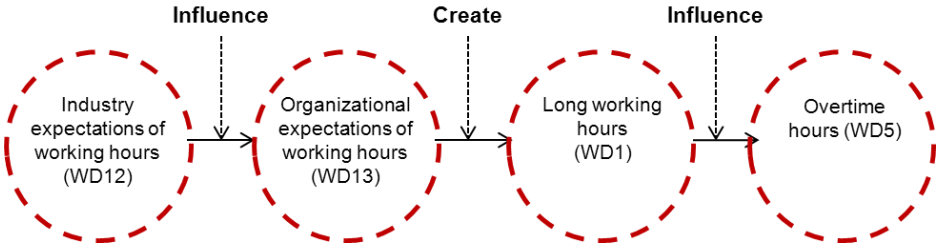

Figure 10-6. Example of the demand- demand interaction within the work microsystem.

In seeking to explore and define the range of demands that operate within a microsystem, it is imperative to consider which demands have an interdependent relationship with other demands. Pocock *et al.* (2012) developed a conceptual model which contends that the work, family and community domains, as well as the domain intersections, create demands and resources. Findings of this research extend the work of Pocock *et al.* (2012) by identifying some of the demand-demand interactions demonstrated within the Australian construction industry. Within a microsystem, some demands may act as 'influencers' and some may act as 'creators'. This means that a demand should not be considered in isolation. Instead, the demand should be considered as one part of a dynamic and interactive system. Such an understanding of the work domain as a dynamic and interactive microsystem is an important consideration for construction organizations seeking to create a productive and positive work environment for their workers. For example, an organization may seek to minimise or remove demands perceived as damaging, such as emotional strain and interpersonal conflict. Emotional strain, defined in the research as the experience of stress and tension while undertaking work activities, has reported negative outcomes such as impaired psychological health including burnout (Peeters *et al*. 2005). The outcomes of interpersonal conflict have been reported as anxiety, depression, and frustration (Spector and Jex, 1998). Emotional strain and interpersonal conflict at work are inherently influenced and created by other work-based demands. By applying a systems approach, it becomes clear that seeking to minimise or remove demands perceived as damaging from the microsystem requires an

understanding of the microsystem. The example shown in Figure 10-5 (above) is used to illustrate how an understanding of the microsystem can enable the management of a demand/s. It is possible that the organsiation can assist with the management of emotional strain in two ways. Firstly, the demands which created the emotional strain can be modified. In this case, work overload created the emotional strain. If work overload was removed, the emotional strain associated with work overload would also be removed. Secondly, a resource may be utilised which acts to minimise the demand. In this case, co-worker practical support may be called upon to assist with work overload. The practical support (resource) acts to reduce the experience of work overload (demand), which results in the removal of emotional strain (demand). The way in which resources can interact with demands such that the demand becomes manageable or is removed is considered in the following section.

10.2.3 Demand-resource fit

All groups considered support from work as very important in helping them to meet their demands, irrespective of demand profile. Forms of support included emotional, informational, and practical support from both supervisors and co-workers. Results suggested that specific forms of support in the work domain were utilised to meet specific demands in the work domain. The interview data revealed that group one would call on emotional support from their supervisor and co-workers to assist in managing strain based demands, such as interpersonal conflict at work and emotional strain at work. All groups suggested that they would call on practical support from their supervisor and co-workers when they were experiencing work overload. This finding is supported by van Vegchel (2005, p.162), who contends that "*particular types of job resources may be required to counteract the negative effects of specific demands (i.e., a certain fit between demands and resources may be needed)*". Support has been identified as an important resource in the work-life literature (for example, Goldsmith, 2007; Hammer *et al*. 2011; Hill, 2005; Lingard and Francis, 2006; Lingard *et al*. 2010c; Voydanoff, 2007). Also, social support is linked to reduced emotional exhaustion (Greenglass, 1991), reduced depression (Repetti, 1987), and increased job satisfaction (Sergeant and Frenkel, 2000). House (1981) identified support as a multidimensional construct, and identified four types of support which included emotional, instrumental, informational and appraisal. However, support has frequently been measured as a one-dimensional construct in the work-life literature, which does not recognise the multi-dimensional nature of the construct. Furthermore, the support construct is commonly measured using a multiple item scale of which the data is combined (for example, Abendroth and den Dulk; 2011; Adams, King and King, 1996; Campbell Clark, 2001; Erdwins, Buffardi, Casper and O'Brien, 2001; Hammer *et al.* 2011; Lapierre and Allen, 2006; ten Brummelhuis

and van der Lippe, 2010). In such a measure, the support typologies, as outlined by House (1981) are not identified. Rather, a general measure of support is determined. Given that specific types of support may be called on by individuals to manage specific demands (Cutrona and Russell, 1990; Häusser, Mojzisch, Niesel and Schulz-Hardt, 2010), a general measure of support is not able to identify such distinctions. In considering the demand-resource relationship from a systems perspective, the results suggest that specific demands may interact with specific resources, such that 'fit' is achieved. 'Fit' used within this context refers to the notion that the resource interacts with the demand, such that the demand is removed, reduced, or perceived as manageable by the individual. This research supports the notion that demand-resource profiles of workers are better understood when specific demands and resources are examined rather than relying on appraisals of constructs (Voydanoff, 2007).

10.2.4 Positive, stressful or neutral?

All groups worked long hours and experienced a high level of work overload. Results indicated that this generated a high level of emotional strain and mental strain for groups one, three and four. However, group two experienced emotional and mental strain to only a slight extent. The interview data suggested that this was due to the meaning attributed to work by this group. Group two reporting enjoying work very much. For example, one member of group two commented "*working is a hobby for me. I love building and I get paid for it"*. Another member commented "*I love work and I love a lot of pressure".* For this group, the meaning attributed to long work hours was positive. In contrast to group two, group one and three perceived that working long hours was expected in the construction industry, and that consequently, meaning attributed to long work hours was neutral. For example, one participant commented on expectation and acceptance of long work hours "[*it's] part of the deal, it's what I signed up for*". Irrespective of this, however, the group experienced mental and emotional strain. Group four experienced long work hours together with job insecurity to a very large extent. Members of this group perceived that there was pressure to maintain their job in order to support their family. In one sense, long work hours was perceived as positive because it meant that individuals were employed and able to support their family. In another sense, long work hours was perceived as neutral because work long hours was expected in the construction industry. The different meanings attributed to long work hours demonstrated in the research are consistent with previous findings, which have acknowledged that factors other than the actual quantity of hours worked may contribute to the experience of time in work as positive, neutral or negative (Clarke *et al.* 2004; Francis-Smythe and Robertson, 1999; Reeves and Szafran, 1996). Clarke *et al*. (2004, p.134) contend that "*long work hours may be associated with increased performance, job*

promotions, and higher income. The employee may make the assessment that although increased involvement at work is difficult, the benefits thus derived compensate for this difficulty".

The way in which meaning attributed to the experience of work hours differed between groups raises the issue of subjectivity. This finding supports previous research which contends that subjectivity plays a critical role in attributing meaning to experience (Barnett, 1998; Dugan, Matthews and Barnes-Farrell, 2011). Barnett (1998) raised the issue of long hours and the subjective meaning ascribed by workers. Barnett (1998, p. 134) stated that "*there is no a priori reason to believe that work hours will have similar effects on diverse outcomes or will have similar effects for all employees*". Demands are considered as a subjective experience, and are derived from a cognitive appraisal of the situation and circumstances (Edwards and Rothbard, 1999; Hill, 2005; Moen *et al.* 2008). Within the work-life domain, it has been assumed that work demands are negative experiences (Boyar *et al*. 2007). Such an approach does not consider the subjective nature of experience. The results of this research challenge the notion that work demands are negative experiences. Instead, a demand can be perceived as positive, negative or neutral, and that meaning attributed to a demand will vary according to the individual who is experiencing that demand.

10.2.5 Demand trade-offs

All groups worked long hours. Long work hours have been defined as 45 hours a week or more, which includes overtime, both paid and unpaid (van Wanrooy and Wilson, 2006). As a consequence of long work hours, group one indicated having to compromise activities in the family and community domains in order to meet work responsibilities. Demands which were compromised, or 'traded-off', ranged from volunteering activities, through to social activities, and health and fitness activities. Trade-offs are defined as "*the compromises, sacrifices, adjustments, or accommodations that people make in their job and/or their personal life to attain their objectives or fulfill responsibilities*" (Mennino and Brayfield, 2002, p.226-227). For example, one participant commented "*when I am hard up for time fitness suffers first, social life suffers second, but work never suffers*". Participants acknowledged, however, that while some demands had to be traded-off in order to meet work responsibilities, they were still considered important. For example, one participant commented "*I don't do volunteering now, but not by choice……[I] feel like it's missing in my life. I did Saturdays while I was at uni. But now I work every second Saturday so cannot commit to the volunteering*". Group three and four also indicated trading-off community based activities, such as volunteering, due to long work hours.

It is possible that the requirement for workers to regularly 'trade-off' activities such as social activities, health and fitness activities, and volunteering activities in order to meet work responsibilities may have a negative influence upon their health and well-being. The World Health Organization (1948, p.100) defines health as "*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*". It has been well documented that social connectness (Australian Bureau of Statistics, 2010b), health and fitness activities (National Public Health Partnership, 2001; Population Health Division, 2008; Spence, 2001) and volunteering activities (Corporation for National and Community Service: Office of Research and Policy Development, 2007; Thoits and Hewitt, 2001) are linked to an individual's health and wellbeing. The requirement of workers to regularly trade-off activities has the potential to negatively influence their health and well-being. Construction organizations may consider providing access to resources which supports the health and wellbeing of workers, through participation in activities which have previously been traded-off. Providing workers access to flexible work resources may by one such way that this can be achieved. Flexible work resources are discussed in Section 10.2.7.

10.2.6 Similar experience, different meanings

Group two and four shared similar demographic profiles, such as gender composition, age, household structure, hours worked and parental status. Both groups experienced similar demands from the work and family domains, although group four experienced a high level of strain compared to group two. Members of group two appeared to have sufficient time to undertake all of their demands, while members of group four appeared to be time poor and struggled to meet their demands. Group two was actively engaged in multiple domains and experienced minimal strain arising from multiple role engagement. There was no requirement to trade-off activities in the family and community domains due to a high level of demands originating from the work domain. This finding can be considered in the context of expansionist theory (Barnett and Hyde, 2001). Marks (1977) suggested that human energy is not finite but that active engagement in one domain can re-energize an individual involved in multiple roles. Building on Marks (1977) concept, Barnett and Hyde (2001) developed the expansionist theory. Expansionist theory contends that multiple roles are beneficial to an individual. One of the major features of the expansionist theory is the creation and access to resources, such as income and social support. In contrast to group two, time was finite for group four. The scarcity hypothesis (Goode, 1960) may be applied to this finding. The scarcity hypothesis (Goode, 1960) contends that time spent in one role depletes the time available for another role. According to the scarcity hypothesis, it is assumed that personal resources of time, energy, and attention are finite. According to this view, devoting attention

to one role implies that fewer resources can be invested in other roles (Greenhaus and Beutell, 1985).

It is not clear why group two and group four attributed different meaning to a similar set of demands. One possible explanation is that coping strategies may have differed between the groups. Within the work-fit model, it is possible that coping strategy may act as a type of resource which can assist individuals in meeting their demands. It is suggested that the possession of sufficient coping skills can be a critical deciding factor in whether the benefits of combining multiple roles will outweigh the costs (Perrone *et al*. 2006). Carver, Scheier, and Weintraub (1989) identified three general types of coping strategies which an individual may utilise in order to cope with a stressor. The first is active coping, in which the stressor is removed or minimised. The second is avoidance coping, in which the individual is in denial or expresses behavioural or mental disengagement from the stressor. The third is emotion-focused coping, in which the individual seeks moral support or sympathy. As coping strategies were not investigated nor measured as part of this research, it is not known whether group two used coping strategies to effectively manage their demands. In the literature, coping strategies have most often been investigated within the context of work-family conflict (Haar, 2006; Lapierre and Allen, 2006; Rotondo and Kincaid, 2008), however little work has been conducted on coping and work-life fit. Given that coping strategies may interact with demands, future research which investigates the demand-resource profiles of workers may seek to investigate whether coping resources contribute to work-life fit. Such an understanding may assist in explaining why individuals who have similar demographic characteristics and demand-resource profiles attribute different meaning to these experiences, and experience different levels of resulting strain.

10.2.7 Flexible work resources

Results suggested that the experience of a demand in one microsystem can be influenced and shaped by the access to a resource in another microsystem. Access to flexible work resources may assist workers to meet their demands in the family and community microsystems. For example, time off work for personal reasons was an important resource for all groups, irrespective of demand profile. It was considered that this resource would assist workers to meet personal-related demands which originated in the family and community domains. This was the case, as within the construction industry, jobs based onsite must adhere to a rigid format whereby the start and finish times are inflexible. Furthermore, site-based jobs are structured in such a way that weekend work is standard. Group one and group three indicated that the rigid nature of jobs, which entailed an early start and a late finish over six days a week, made it difficult to attend to personal matters,

such as banking and health related issues. For example, a member of group one commented "*personal and administrative stuff is hard to get done and is a demand. It's hard to get to the bank or get a haircut as we have to do it during work time*". Flexible work hours (flexitime), in which workers have the capacity to choose their start and finish times, was considered as an important resource by all groups to assist in meeting demands outside of the work domain. Groups perceived that access to flexible work hours would enable participation in some of the activities which they were required to trade off, such as volunteering activities and health and fitness activities. Therefore, within a systems framework, the interaction between demand A and resource A would create the capacity to undertake demand B. This demand-resource interaction is shown in Figure 10-7. For example, work hours (demand A) may interact with flexitime (resource A), such that the capacity to undertake fitness activities (demand B) is created.

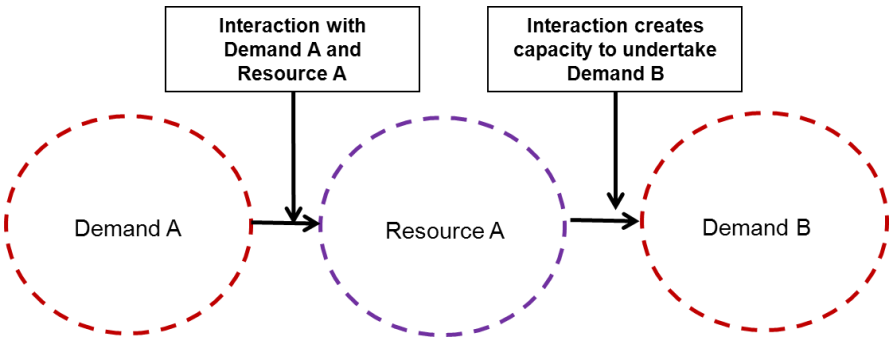

Figure 10-7. Interaction between a demand and resource, which creates the capacity to undertake an additional demand.

In applying a systems framework which views the person as a 'whole' rather than in parts (Barnett, 1998), it is possible that the inability to attend to personal matters during work time and having to trade-off activities which are considered important by individuals, may create stress. This stress has the capacity to spillover into work, family and community microsystems (Voydanoff, 2007). For organizations, providing flexible work resources which assist workers to meet their demands outside of the work microsystem may indirectly benefit the organization, through the alleviation of stress which may be created due to the inability to meet those demands.

10.2.8 Time for self

Time for yourself, described in this research as "y*ou have time alone to relax and unwind"* was considered an important resource by all groups, irrespective of demand profile. Participants indicated that time spent alone assisted in managing demands, such as a stressful day at work, stress experienced through daily commuting to and from work, or stress arising from interpersonal conflict at home. Time for self was not originally included in

the set of resources, however was added at the suggestion of participants of the pilot study. Time for self has received little attention as a resource within the work-life literature. Related concepts of self-care, self-management/relaxation, and leisure have been explored in the context of stress and strain literature, however these appear to have a different contextual meaning than the definition proposed in this research. For example, Osipow, Doty and Spokane (1985) conceptualised self-care in the context of coping resources, as the extent to which an individual regularly engages in personal activities for health purposes such as controlling diet, exercise and sleep. Osipow and Davis (1988) found that high levels of self-care prevented high levels of strain by reducing the influence of role overload, role ambiguity, role boundary and responsibility. In an exploration of the underlying dimensions of coping, Gol and Cook (2004, p.163) identified 'self-management/relaxation' which incorporates "*specific cognitive and behavioral interventions aimed at controlling emotions and increasing the ability to focus cognitively*". In contrast, Gambles, Lewis and Rapoport (2006, p.69) refer to leisure an "*an important way of relaxing and refreshing the spirit. It is an important dimension of caring for the self and can enhance and sustain well-being and performance in all spheres of life*". While this definition relates to leisure, it partially aligns with the way in which participants explained the notion of 'time for self'. The findings from this research contribute to the literature by identifying that time for self is an integral component of work-life fit for workers of the Australian construction industry. Time for self serves to help manage demands, irrespective of whether that demand originates from the work, family or community microsystem. Given its importance to all participants, this resource merits further consideration within the work-life domain.

10.2.9 Meaning and pride

Pride from work was perceived as a very important resource by all groups, irrespective of demand profile. Participants suggested that pride in work, defined in the research as '*proud of your work participation and achievements',* acted as a resource which assisted individuals to 'put up' with the demanding characteristics of the construction industry. For example, one participant commented "*pride in work is linked to satisfaction. Because of this [satisfaction] I can do the long hours*". Another participant referred to pride in the context of rewards. The participant acknowledged that the construction industry was 'tough', however he also considered that there was a positive aspect to the industry: "*the construction industry is very rewarding as you can see 'the fruits of your passion'. You can see the building completed*". The results suggest that pride from work is an important resource which interacts with work demands, such that participants tolerate the demanding characteristics of the industry. Meaning from work was also considered as a very important resource by all groups, irrespective of demand profile. In the research, meaning from work was defined as

'*undertaking work that is meaningful to you. You perceive your work to be significant and important'.* Like pride in work, meaning from work was perceived as a resource which interacted with work-based demands such that the difficult characteristics of the industry could be endured. It is possible that meaning and pride from work contributed to an individual's retention in the construction industry. Minimal investigation has examined how pride and meaning from work contribute to construction workers' perceptions of satisfaction, reward, and retention. Given the importance placed on pride and meaning by all participants, future research might examine the function of pride and meaning from work for workers of the construction industry.

Along with pride and meaning from work, pride and meaning from family were also perceived as very important resources for all groups. In contrast, pride and meaning from community were not considered as important. A possible explanation may be that all groups considered their work and family roles as substantially more important than their community role, which was reflected in their perception of pride and meaning from the various domains. Future research might examine the relationship between pride and meaning in the work, family and community domains and determine whether there is a relationship with role importance. Role importance is further addressed in Section 10.4.1. Voydanoff (2007) categorised pride and meaning as psychological resources. Psychological resources are "*aspects of personality enrichment that increase self-esteem and gratification*" (Voydanoff, 2007, p.77). Voydanoff (2007, p.78) indicated however, that "*little is known empirically about the effects of meaning and pride on work, family and community role performance and quality, and individual well-being*". Since Voydanoff's (2007) assertion, there appears to be minimal work which has sought to progress the meaning and pride concepts within a demand-resource framework. This research, therefore, contributes to the literature by identifying that pride and meaning from the work and family domains are considered important resources which assist in meeting demands, and contribute to work-life fit.

10.3 Research question two

The second research question sought to identify whether demand-resource profiles differed between workers. The first sub-question sought to investigate whether life stage influenced the configuration of demand-resource profiles. The second sub-question sought to investigate whether white collar (salaried) and blue collar (waged) workers had different demand-resource profiles. The questions are addressed in this section.

10.3.1 Life stage

Results demonstrated that life stage influenced the configuration of demand-resource profiles. This is consistent with previous research, which contends that work, family and community demands and resources vary by life stage (Demerouti, Peeters and van der Heijden, 2012; Erickson, Martinengo and Hill, 2010; Lingard and Francis, 2005a; Moen, 2011; Pocock *et al.* 2012). Pocock *et al*. (2012) refer to eight life stages, including infant, children, teenager, adult in pre-family formation, parent, pre-retiree, retiree, and the aged. Of these life stages, group two and group four were categorised as parents. Group two and group four had dependent-aged children, and this was reflected in their demands originating from the family domain, as well as the resources required to meet these family-based demands. Group three was primarily child-free and did not experience child-based demands, nor required child-related resources to meet their demands. According to the life stage concept, group two was categorised as adults in pre-family formation. The parental status of group one was varied, with approximately half of the members child-free. For this group, child-based demands were experienced to a moderate degree. The group differed according to life stage. Some members were in the adult in pre-family stage, some were parents of dependent aged children, and some were parents of older (adult) children. These results are considered within the context of life stage in the following section.

10.3.1.1 Adult in pre-family formation

According to the life stage approach, group three and some members of group one were categorised as adults in pre-family formation. For these participants, household structure appeared to have an influence on demand-resource profile. Household structure varied, with some members living alone, some with their parents, and some with their partner. For the sub-set of individuals who lived alone, one of the issues highlighted was the lack of resources they had in the family domain which could assist them to meet their demands. For example, individuals who lived alone did not have resources at home to help them with household chores, which tended to exacerbate this demand. This demand-demand interaction is shown in Figure 10-8. Individuals suggested that help with household chores would minimise the strain they experienced in undertaking this demand, and this demand-resource interaction is shown in Figure 10-9. For the sub-set of individuals who were not partnered, they did not have access to partner practical support, informational support and emotional support. Therefore, for these individuals, support from friends were considered as important resources in helping them to meet their demands.

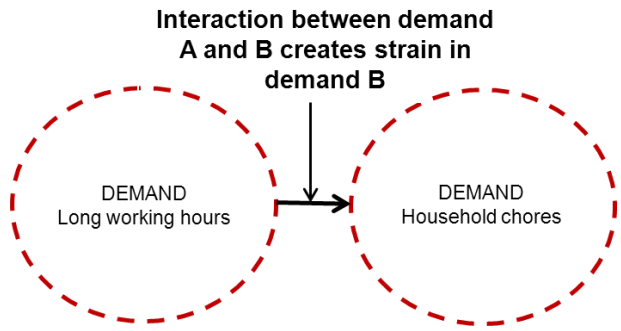

Figure 10-8. Long work hours interacts with household chores to create strain.

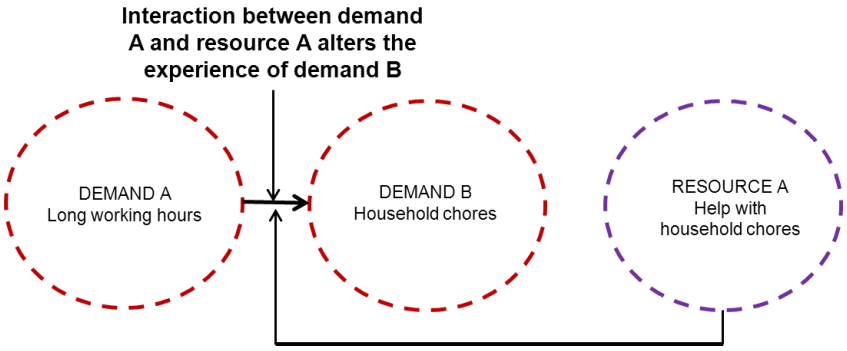

Figure 10-9. Long work hours (demand) interacts with help with household chores (resource) to alter the experience of household chores (demand).

Much of the research conducted in the work-life domain has focused on working mothers and working fathers. Research has sought to examine how working mothers and fathers can be supported by the organization to manage their responsibilities in multiple domains, specifically relating to work and childcare (for example, Allen, Shockley and Poteat, 2008; Barnett and Gareis, 2007; Milkie, Kendig, Nomaguchi and Denny, 2010). Due to a narrow focus, workers who are single and childfree have been under-represented groups of workers in work-life research (Casper *et al*. 2007; Moen, 2011; Parasuraman and Greenhaus, 2002; Pocock *et al*. 2012). Findings of this research suggest that within the construction industry, all workers experience a high level of demands originating from the work domain, irrespective of life stage. Workers without children experience work-based demands similar to those experienced by workers with children. Therefore, irrespective of life stage and parental status, all workers require resources to assist them in meeting their work-based demands. Workers who live alone or are not partnered have fewer resources within the family domain from which to assist them to meet their work-based and home-based demands, and this should not be ignored in research and policy development. Further research which seeks to investigate workers' experience of demands and resources should extend their investigation beyond working parents. An understanding of workers diverse experience of demands, and the resources considered necessary to meet demands, will enable the support of a diverse and heterogeneous workforce.

10.3.1.2 Parents

Results demonstrated that workers with dependent-aged children experienced a different set of demands originating from the family domain compared with child-free workers. Members of group two and four were all parents with dependent-aged children. For these groups, demand-resource profiles comprised of child-based demands and resources. Qualitative data revealed that support from home was considered a critical resource which enabled members of group two and four to meet their work responsibilities, as well as their family responsibilities. This demand-resource interaction is shown in Figure 10-10. In this Figure, partner practical support enables individuals to participate in long work hours and overtime hours. Furthermore, partner practical support enables these workers to manage their child-based demands. Therefore, enabling resources are defined as those resources which 'enable' an individual to manage multiple demands across multiple domains. The findings of the research reveal the complexity of work-life fit and how household structure contributes to the demand-resource experience of individuals. This research focused on the worker as the unit of analysis. Given that household structure appears to have an influence of work-life fit through the experience and access to demands and resources, further research could explore work-life fit using the household as the unit of analysis.

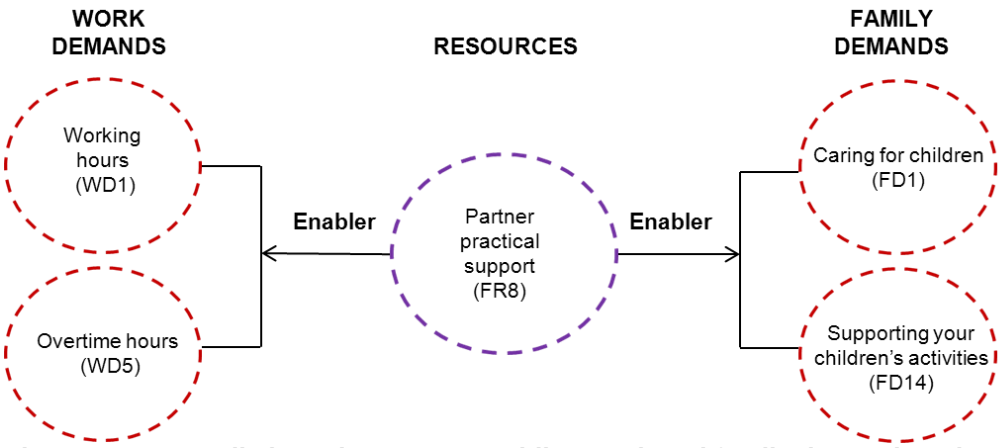

Figure 10-10. Family based resource enabling work and family demands to be achieved

According to the life stage approach, demand-resource profiles of parents will change over time. Six family life stages have been proposed by Erickson *et al*. (2010), which recognises that each stage will create a particular set of demands. These stages are: before children; transition to parenthood; preschool child; school-age child; adolescent child; and empty nest. It is expected that parents will move through these six family stages and this will be reflected in their demand-resource profile (Demerouti *et al*. 2012; Erickson *et al.* 2010; Pocock *et al.* 2012). As parents move through the various stages, some demands relating to child care will reduce or cease, while others will take precedence, such as care for elderly parents or relatives, or care of grandchildren (Hill, Jacob, Shannon, Brennan, Blanchard and

Martinengo, 2008). In these cases, a different suite of resources may be required to meet these demands. This research has identified that life stage influences and shapes demand-resource profiles of workers. Further research may seek to build upon these results by investigating the demand-resource profiles of workers according to life stage of early, middle and late adulthood. Previous research has suggested that demands and resources vary according to life stage (Demerouti *et al.* 2012; Moen, 2011; Pocock *et al.* 2012). An understanding of demand-resource profiles of workers at all stages will assist organizations in a number of ways. Firstly, a capacity to provide resources which enable young workers to meet their multiple domain demands may contribute to retention of these workers in the industry. Research has previously indicated that young workers expect employers to accommodate their work-life issues (Beutell and Wittig-Berman, 2008). Secondly, an understanding of the demands which workers experience in their family domain will assist organizations to be responsive to the needs of workers as they move through the various family stages. Finally, little is known how workers of the construction industry transitioning to retirement experience demands, and what resources they require to meet these demands. It has been suggested that older workers transitioning to retirement have a preference for staying connected to work in a part time capacity (Erickson *et al*. 2010; Moen, 2007). In an aging workforce, it may be prudent of organisations to retain their highly experienced workers, who can pass on knowledge and act as mentors to younger workers. An understanding of demand-resource profiles will assist organizations to retain these highly skilled and knowledgeable workers.

10.3.2 Waged and salaried workers

Findings suggested that within the construction industry, all workers experienced a high level of demands originating from the work domain, irrespective of type of job. All groups comprised of both salaried and waged workers, therefore demand profiles of the four groups was not differentiated according to worker category. This result was somewhat unexpected, based on previous research which has suggested that waged and salaried workers experience different work-based demands (Boschman, van der Molen, Sluiter and Frings-Dresen, 2011; Rothenbacher, Brenner, Arndt, Fraisse, Zschenderlein and Fliedner, 1997; Sturmer, Luessenhoop, Neth, Soyka, Karmaus, Toussaint, Liebs and Rehder, 1997) and have higher levels of work-life conflict (Lingard *et al*. 2010a). Physically demanding work has been reported as one work-based demand which differentiates waged and salaried workers (Boschman *et al*. 2011). However, it would appear that waged and salaried workers share a common set of demands which are driven by industry and organizational cultures. Irrespective of job category, workers will work long hours, overtime, and experience work overload.

Findings suggested that 'what' was experienced did not differ to a great extent between waged and salaried workers. There was, however, some variation in 'why' waged and salaried workers participated in work demands, such as overtime. Waged workers worked long hours and overtime in order to maximise their income. One waged worker commented "*I am paid by the hour. I put in hours to earn money*". In applying a systems framework, overtime hours created income, which was valued by waged workers. In this case, there was an interaction between a demand and a resource. This interaction is shown in Figure 10-11. In contrast, when salaried workers undertook overtime, they did not get paid for it, therefore a resource was not generated. It would appear that the demands and resources experienced by workers differed according to employment contractual arrangement. This result is consistent with Lingard *et al*. (2008). Furthermore, results suggested that the way in which waged and salaried jobs are structured influenced which demands are experienced, such as physical strain.

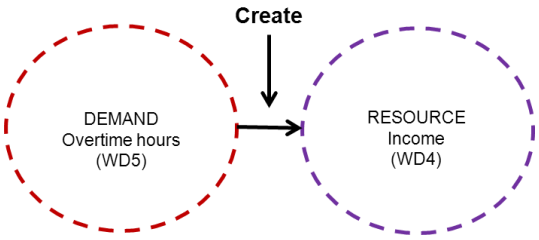

Figure 10-11. Overtime hours creates income for waged workers

Much of the research conducted in the Australian construction industry has investigated salaried workers experience of work-life interaction (for example, Lingard and Francis, 2004, 2005b, 2006, 2007). While some research has investigated the work-life experiences of waged workers in the construction industry (for example, Lingard *et al*. 2010a; Lingard, *et al.* 2008), waged workers remain an understudied population and work-life experiences of these workers has not been well understood. This research contributes to the literature by identifying which demands are experienced by waged workers. Furthermore, the findings suggest a level of commonality of experience of demands between waged and salaried workers.

10.4 Research question three

The third research question sought to investigate whether worker attributes influenced demand-resource profiles. Two worker attributes were investigated. Firstly, whether workers who put more importance on their work, family or community roles experienced demands from these domains in a different way, or had different resource preferences to achieve work-life fit. Secondly, whether a preference to segment or integrate work, family and community

roles would influence workers resource preferences to achieve work-life fit. Results suggested that worker attributes influenced demand-resource profiles, and this is considered in the following section.

10.4.1 Role importance

All groups considered their family role as more important than their work role, and their work role as more important than their community role. This is consistent with the notion that while adults have multiple role identities, salience of the identities is not the same for each role and that these roles are placed in a hierarchy (Bagger *et al.* 2008). Family role importance for group two was significantly higher than group one and group three. Level of family role importance of group four (mean=6.4) was similar to that of group two (mean=6.6). Both of these groups had dependent-aged children, and experienced child-based demands to a large extent. Resources which assisted these groups to meet their child-based resources were considered important. Group one and group three had a lower level of family role importance, and their demand-resource profile reflected less family-based demands. Furthermore, all groups considered community role importance as lower than work and family role importance, and this was reflected in demand-resource profiles. It is possible that family role importance may be linked to life stage (Demerouti *et al*. 2012). As individuals move through the various life stages, family role importance may take precedence during the 'parent' stage as compared to the pre-family stage, and this consequently influences demand-resource profiles. The relationship between role importance and life stage was also suggested by workers' perception of community role importance, and participation in community-based activities. All groups considered that they would have the capacity to increase their community involvement when their work and family demands decreased. There was a sense that this would occur towards the end of their working career, as priorities shifted away from work as individuals moved into pre-retiree and retiree stages. Therefore, it is possible that level of community role importance may be linked to life stage, and this in turn influences demand-resources profiles. Further research which investigates the work-life fit of workers in the construction industry may seek to determine how life stage and role importance interact and how this might influence demand-resource profiles.

10.4.2 Segmentation-integration preferences

Results indicate that all groups had a high preference for segmentation between the work and family domains. All groups appeared to accept the separation between work and family domains, particularly those who were based onsite. It was understood that bringing family onsite was not possible, nor was working from home. Previous research has suggested that workers who prefer segmentation between work and family domains are more likely to utilise

flexitime as it assists to segment the two domains (Olson-Buchanan and Boswell, 2006; Rothbard, Philips and Dumas, 2005; Shockley and Allen, 2010). Given the rigid nature of job design within the construction industry, there appears to be little opportunity for workers to utilise flexitime, particularly for those workers who are based onsite. Workers based onsite indicated that they had a designated start and finish time, and there was little room for negotiation to vary these times. The findings support previous research, which contends that cultural and physical attributes of an industry may pre-determine or drive segmentation preferences of workers (Rau and Hyland, 2002). This appeared to be the case for the construction industry, which promotes segmentation of domains through the rigid structure and design of work. Kreiner (2006, p.426) states that "*workplaces vary in the degree to which they create an environment that promotes either segmentation or integration*".

While there appeared to be a preference for segmentation between the work and family domains, which was driven by the industry and organisation of work, the results suggested that there may be a preference of integration for the community domain with other domains. Group one and three indicated that they would like to engage in the community, but were time poor and could not find the time to participate in community. Some members of group one who were time poor indicated that the only opportunity they had to undertake community based activities were on occasions when their employer had arranged a volunteering activity. Another member of group one explained that his partner and children used their 'family time' to volunteer in the community. They often undertook tree planting activities together, so in this case, the individual integrated his family and community domains. The findings suggest that workers who consider themselves as 'time poor' may prefer to integrate the community domain with other domains, so as to enable participation in volunteering and community-based activities. The extant literature has primarily focused on segmentation-integration between the work and family domains. Therefore, the preference for segmentation or integration of the community domain is a component of the work-life domain which has received very little attention and is not well understood. Findings of this research suggest that segmentation-integration preferences of construction workers should extend beyond just work and family, and be considered in the context of all domains which contribute to an individual's perception of work-life fit. This is of particular relevance for individuals who consider that community role importance and engagement in community based activities is an integral component of their work-life fit.

10.5 Research question four

The fourth research question sought to investigate whether Q Methodology was a sound methodology from which to explore the work-life experience of workers in the Australian

construction industry. Results suggest that Q Methodology was an appropriate methodology, and this is addressed in the following section.

10.5.1 Exploratory research

To date, no research had yet to explore the full range of demands experienced by construction workers in the work, family and community domains. Through the application of Q Methodology, the range of demands experienced by workers was identified, as well as the meaning attributed to these demands. These findings present new insights into the experience of workers in the construction industry. Application of Q Methodology in the research supported the notion that Q Methodology is considered a sound method for conducting exploratory research *a priori*, (Anandarajan *et al*. 2006; Watts and Stenner, 2005), whereby hypotheses can be formed and investigated in subsequent research.

10.5.2 Subjectivity of experience

According to the subjective cognitive appraisal framework (Lazarus and Folkman, 1984) individuals perceive experiences differently. Based on this view, some researchers have recognised the subjective component of the work-life experience (Hill, 2005; Moen *et al*. 2008; McCubbin and Patterson, 1983). Q Methodology was used to investigate individual's experience of demands, and the subjective nature of this experience was identified through the formation of the four groups. Qualitative data obtained through the methodology enabled the subjectivity of experience to be explored.

10.5.3 Mixed methods

In order to triangulate the results, as well as obtain additional data to aid interpretation of the results, a mixed methods approach was applied. It is common practice to combine Q Methodology with survey based data which provides information to assist with interpretation of findings (Brown, 1980; Watts and Stenner, 2012). Survey research was used to examine a range of variables which included participant demographics, segmentation preferences, and role importance. Survey research was also used to determine which resources were required by participants to meet their high ranked demands. By combining the survey data with the Q data, it was possible to interpret demand-resource profiles in conjunction with demographic characteristics, and explore how individual characteristics were related to demand-resource profiles. The use of Q Methodology in a mixed methods approach was effective in addressing research questions one, two and three.

10.5.4 Reliability and validity

A major strength of the Q instrument was the reliability which it demonstrated, as reported in Chapter 5. The instrument had the capacity to capture an individual's experience of demands, and this was demonstrated through the post hoc test which was conducted eight months after the initial Q sort. For participants who had experienced a change in their work, family or community domain since the initial test, these changes were captured by the instrument. Similarly, participants who reported little or no change of circumstance in their work, family or community domains reflected this through the instrument. Content validity of the instrument was established through the rigour applied to the development of the tool. A literature review was used to initially identify demands. Following this, all demands were verified by an expert panel. After the demands had been verified, a pilot study was undertaken to test the Q instrument.

10.5.5 Generalizability of results

The purpose of Q Methodology is to explore phenomena *a priori.* The aim is to sample the range and diversity of views expressed, not to make claims about the percentage of people expressing them (Brown, 1980; Kitzinger, 1987; Watts and Stenner, 2012). Therefore, a possible limitation of Q Methodology is the inability to generalise results to a population. Given that Q Methodology is used as an exploratory methodology, its strength lies in its capacity to form new insights and consequently propose hypotheses, which can be investigated using an approach that allows for generalizability of results. Therefore, the inability to generalise results does not present as a significant limitation.

10.6 Work-life fit model

The findings of the research form the basis of a new work-life fit model which applies a demands-resources approach. The work-life fit model is a dynamic model, which is embedded with a systems framework (Bronfenbrenner, 1989). This assumes that the multiple domains of work, family and community for an individual are not separate spheres (Kanter, 1977). Instead, each domain interacts so as to form a dynamic system which changes continually (Pocock *et al*. 2012). The model draws on Voydanoff's (2007) conceptual model of work-family fit and balance, which positions demands and resources as a critical component within the work-life fit framework. Voydanoff's (2007) model is outlined in Chapter 2, Section 2.12. The model also draws on Hill's (2005) theoretical model of work-family facilitation and work-family conflict, which draws on the cognitive appraisal model of stress and coping, developed by Lazarus and Folkman (1984) and Lazarus (1991). Hill's (2005) model is outlined in Chapter 2, Section 2.9.2. Finally, the model draws on Barnett's (1998) work-family model which recognises the dynamic nature of the work, family and social

system of the individual. Barnett's (1998) model is outlined in Chapter 2, Section 2.6. These models serve as a foundation from which to progress the work-life fit model. The following sections describe each component of the model.

10.6.1 Demands and resources

The first component of the model reflects the complex interaction between demands and resources, as shown in Figure 10-12. A systems approach is applied to demand-resource interactions, which assumes that demands and resources do not function independently. Rather, demands and resources are inherently related. Demands interact with other demands and resources. Some demands act to influence or alter the meaning of the second demand. In other instances, one demand may act to create a second demand. A demand-resource interaction also occurs, whereby a resource may act as an enabler such that the conditions of a demand can be met. Within the system, therefore, when the condition of one demand or resource alters, it is probable that another demand/s or resource/s will be altered due to the interdependent and dynamic nature of the system.

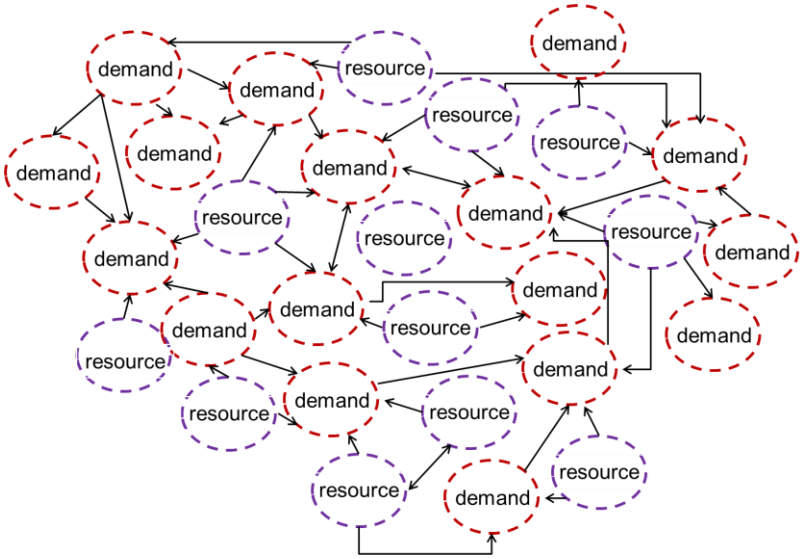

Figure 10-12 Demands and resources in the work-life fit model.

10.6.2 Demands and resources in the work, family and community domains

Demands and resources operate in the work, family and community domains. The ecological systems framework (Bronfenbrenner, 1979) refers to each domain as a microsystem, which together, operate as a system. There are numerous types of interactions operating within the system. In the work-life fit model, the interaction of demand-demand (D-D) and demand-resource (D-R) occurs within a microsystem and between microsystems. There are multiple forms of interactions operating between demands and resources. For example, some of these include:

- work demand – work demand (D-D): a demand in the work microsystem may influence or create another demand in the work microsystem.
- work demand – family/community demand (D-D): a demand in the work microsystem may create or influence a demand in the family or community microsystem.
- work demand – work resource (D-R): a resource originating from the work microsystem may interact with a demand originating in the work microsystem.
- Work demand – family resource (D-R): a resource originating from the family microsystem may interact with a demand in the originating in the work microsystem.

Figure 10-13 illustrates the demand and resources which interact within the work, family and community microsystems, and between the microsystems. Interactions between multiple demands and resources may occur simultaneously. Given the interdependent nature of systems, it is likely that demands and resources interact in complex and dynamic ways. Furthermore, it is expected that demand-resource interactions will differ between individuals, and this is described in the next section.

Figure 10-13 Demands and resources in the work, family and community microsystems.

10.6.3 Factors influencing demand-resource profiles

A range of factors influence an individual's demand-resource profile. These include life stage, role importance, segmentation preferences, and type of job (blue/white collar). These factors influence the demands which are experienced by an individual, and what resources will be utilised to meet those demands.

- Life stage: demands and resources will differ according to the life stage of an individual. It is possible that an individual's life stage and the level of importance attributed to a role

may interact. For example, as individuals move through the various life stages, family role importance may take precedence when the worker becomes a parent.

- Role importance: the level of importance attributed to a role will influence how the individual allocates his/her time and energy across the different domains.
- Segmentation preference: segmentation-integration preference influences which resources will be utilised to manage demands. For example, segmentors prefer to use flexitime so as to maintain clear boundaries between domains. In contrast, integrators prefer to utilise flexiplace, such as working from home. Furthermore, cultural and physical attributes of an industry or organisation may pre-determine or drive segmentation preferences of workers.
- Type of job: the core activities of a job will influence what demands are experienced by an individual. For example, a blue collar (waged) worker is required to undertake physical work, whereas a white collar (salaried) worker is office-based. The resources accessed by individual may differ according to employment contractual arrangement. For example, a blue collar (waged) worker may be paid for overtime hours or receive rostered days off.

10.6.4 Meaning attributed to experience

The work-life fit model proposes that meaning is attributed to the experience of demand-demand and demand-resource interactions. Experience is essentially a subjective judgement which is derived from a cognitive appraisal of the situation and circumstances (Edwards and Rothbard, 1999; Hill, 2005; Moen *et al.* 2008). According to Lazarus and Folkman (1984), cognitive appraisal is the process of decoding whether an experience is positive, stressful, or irrelevant.

10.6.5 Work-life fit / mis-fit

Results from the qualitative (interview) data suggest that the outcome of meaning attributed to the demand-resource experience will be work-life fit or work-life mis-fit for the individual. The definition of work-life fit or mis-fit is adapted from Voydanoff (2007). Work-life fit occurs when the individual perceives that he/she has the resources required to meet demands such that role performance is effective. Work-life mis-fit occurs when the individual perceives that resources do not adequately enable demands to be met, such that role performance is ineffective. These definitions assume that effective role performance is a subjective evaluation, and that individuals participate in more than one role, such as worker, parent, and volunteer.

10.7 Role quality

Results from the qualitative (interview) data suggest that perceptions of work-life fit or mis-fit shape perceptions of role quality. The role quality component of the model draws on Voydanoff's (2007) conceptual model of work-family fit, as outlined in Chapter 2, Section 2.13. Voydanoff (2007) contends that role quality is "*an affective component that includes subjective evaluations of and satisfaction with multidimensional aspects of role domains*" (p.8). Role quality refers to "*positive and negative affect, such as positive and negative moods and emotions derived from work, family and community activities*" (Voydanoff, 2007, p.8).

10.8 Conceptual model

The work-life fit model is outlined in Figure 10-14. As described in the previous sections, the major components of the model are: (i) demands and resources; (ii) individual factors influencing demand–resource profiles; (iii) meaning attributed to experience; (iv) work-life fit / mis-fit; and (v) role quality. The components of the new model were explained in the previous sections. It is acknowledged that the components identified in the work-life model are by no means exhaustive, nor is this model complete. However, the model provides a useful basis from which to progress the work-life fit concept.

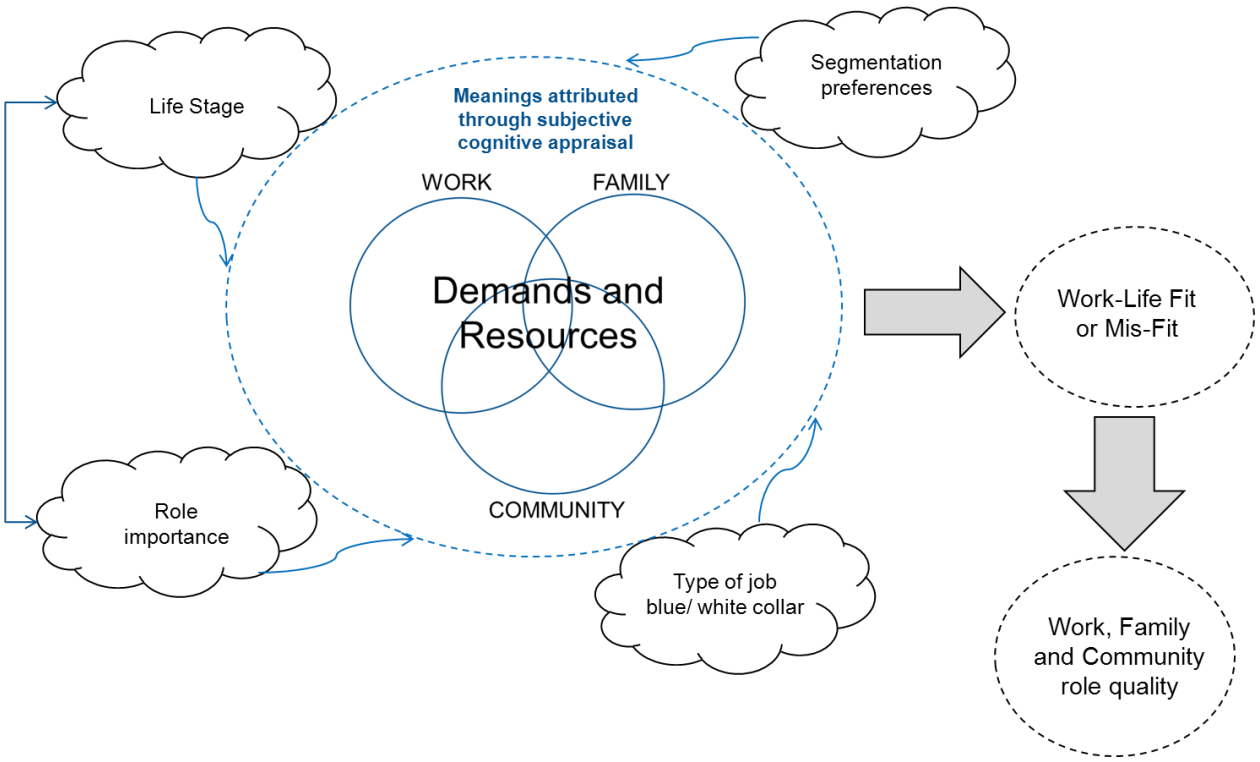

Figure 10-14. Work-life fit model using a demands-resources approach.

10.9 Summary

This Chapter discussed the findings of the research in relation to the four research questions. Each of the questions were addressed, and the findings were considered in the context of contribution to knowledge, and suggested areas of further research. The Chapter then introduced and described a new work-life model which applied a demands-resources approach, and each component of the model was described. The next Chapter outlines the conclusions and limitations of the research, as well as summarising future research.

11Chapter Eleven: CONCLUSION

11.1 Introduction

The research sought to explore the demands and resources of workers in the Australian construction industry through the application of an innovative methodology, and to develop a model in which work-life fit could be explained by configurations of demands and resources from the three domains of work, family and community. Four questions were developed as a basis for the research, and they were addressed in Chapter 10. This Chapter will summarise the contribution to knowledge made by this work in the work-life and construction disciplines. Implications for practice will be outlined, as well as areas of future research, and limitations of the research. Finally, the Chapter will outline the learning outcomes of the researcher.

11.2 Contribution to knowledge

The contribution to knowledge originating from this research is outlined in this section. Different areas of contribution were made. These are: (i) methodology and methods; (ii) demands and resources; (iii) segmentation-integration preferences; (iv) waged construction workers; and (v) extension of conceptual models of work-life fit.

11.2.1 Methodology and methods

In both the construction and work-life domains, there has been an emphasis on survey-based research, as well as a prevalence of quantitative research methods. As outlined in Chapter 10, this thesis extends research methods utilised in the work-life and construction research domains, by implementing and evaluating an innovative Q-methodological approach. Q Methodology was used to investigate individuals' experience of demands, and the subjective nature of these experiences were explored. The application of Q Methodology provides the ability to gain a deep and nuanced understanding of the work-life experiences of workers within the construction management domain. It is also possible that this methodology could be applied to other industries, which seek to explore the demand and resource experience of workers. Furthermore, the exploratory nature of the methodology facilitates the emergence of new knowledge, which can assist in progressing theoretical frameworks and models within the extant work-life and construction literature.

Chapter 5 outlined the process by which the Q instrument was developed, and described how the Q instrument was pilot tested and what revisions were made to the initial instrument as a result of participant feedback. Through the pilot study of the Q instrument, it emerged that the forced distribution format did not adequately capture participants' experiences of

demands. Participants agreed that the unforced format was far superior to the forced format, as it enabled them to more accurately represent their experience of demands through the Q sort. This finding contributes to knowledge by identifying that an unforced distribution may be better suited to Q studies which seek to investigate individual experience. Studies which seek to explore and understand individuals' experience should not constrain the individual in representing his or her experiences through enforcing a forced distribution. Such an approach may mis-represent the individuals' experience, and therefore may introduce reliability error to the research.

Chapter 7 described the development and piloting of the questionnaire instrument. As outlined in the Chapter, a new measure of community role salience was utilised. Community role salience was measured with the same four items as family role salience (Barnett, Eddleston and Kellermanns, 2009), with the word 'family' substituted for 'community'. The community role salience scale demonstrated a high level of internal consistency, as indicated in Chapter 9. Prior to this research, a measure of community role salience had yet to be developed and evaluated within the extant work-life literature, therefore this measure contributes to the body of knowledge through the formation of a new community role salience measure. Chapter 7 also described the development of a new measure which investigated how participants allocated their time to multiple domains. This was measured by asking participants to distribute 100 points into three categories (family, work, and community) according to how time is allocated in their life at the present time. These new measures contribute to the body of knowledge by expanding the work-life paradigm to include community. This supports the growing recognition in the literature that the roles individuals hold are not only limited to 'worker' and 'family member' (Barnett, 1998; Moen, 2011; Morris and Masden, 2007; Pocock *et al.* 2009, 2012; Skinner, Williams and Ichii, 2009; Williams, Pocock and Bridge, 2009; Voydanoff, 2005). Individuals operate within a number of domains which exist beyond work and family, such as community. Inclusion of community in the work-life paradigm also supports the systems approach which contends that the domains in which people operate do not function independently. Rather, each domain operates as a microsystem. These microsystems are implicitly dynamic and inter-related and operate within a larger system, whereby the experience in one domain can alter the experience in another domain. It is therefore critical that future research which seeks to investigate the work-life experience of individuals' utilises measures which have the capacity to capture experience across multiple domains, and recognise the interdependent nature of these experiences.

11.2.2 Demands and resources

Prior to this research, no work in Australia had fully explored the range of demands experienced by workers in the construction industry, or the resources required to meet these demands. Therefore, this research extends the empirical literature by identifying and defining a comprehensive set of work, family and community demands experienced by workers of the Australian construction industry, and the resources perceived as important. Not only were these demands and resources identified, defined and validated, but used to reveal configurations of demands and resources for different worker groups.

As outlined in Chapter 10, pride in work and meaning from work were experienced as resources which interacted with work-based demands, such that the difficult characteristics of the construction industry could be endured by workers. It is possible that meaning and pride derived from work contributed to an individual's retention in the construction industry. Furthermore, it would appear that workers of the construction industry value extrinsic rewards such as income, as well as intrinsic rewards originating from their work. This research, therefore, contributes to the literature by identifying that pride and meaning from work are considered important intrinsic resources which assist in meeting work demands, and which contribute to the work-life fit of construction workers.

Prior to this research, 'time for self' had not been identified as a resource within the work-life literature. As outlined in Chapter 10, 'time for self' emerged as an integral component of work-life fit for workers of the Australian construction industry. 'Time for self' serves to help manage demands, irrespective of whether that demand originates from the work, family or community microsystem. Previous research in the work-life domain has focused on external resources which are required by workers to meet their demands. For example, support from supervisors and co-workers from the work domain, and support from partner, family and friends from the family domain. This research has revealed that internal resources are also valuable, and are important in assisting workers to meet their multiple-domain demands.

Within the work-life literature, it has often been assumed that work demands are negative experiences. Such an approach does not consider the subjective nature of experience. As outlined in Chapter 10, the results of this research challenge the notion that work demands are inevitably negative experiences. Instead, a demand can be perceived as positive, negative or neutral, and that meaning attributed to a demand will vary according to the individual who is experiencing that demand. This thesis contributes to the literature by supporting the notion that the work-life experiences of individuals differ, and that a one-size-fits all approach to supporting workers is limited.

11.2.3 Segmentation-integration preferences

Prior to this research, the segmentation-integration preferences of construction workers were not well understood. This research adds to the body of knowledge through the identification of segmentation-integration preferences of construction workers in the work, family and community domains, as outlined in Chapter 10. Workers of the construction industry have a preference for segmenting work and family domains, and this is driven by the characteristics of the work environment and the rigid and structured way in which work is organised on construction sites. This research has indicated that the experience of segmentation by workers of the construction industry may differ from other industries. Other industries which are primarily office-based, rather than site-based, may enable their workers to utilise resources which support segmentation and integration preferences, such as working from home, bringing children to work, utilising flextime, and working a compressed work week. In contrast, the organization and structure of work on construction sites does not enable workers to utilise these resources. Furthermore, much of the extant literature has focused on segmentation-integration preferences between the work and family domains. This research adds to the body of knowledge through the identification of community segmentation-integration preferences of construction workers in the context of their work and family commitments. It is important to understand this because construction workers experience segmentation/integration differently, and organisations which recognise that preferences differ between workers will be better equipped to support all workers.

11.2.4 Waged construction workers

Waged workers of the Australian construction industry have been an understudied population, and until now, work-life experiences of these workers have not been well understood. The thesis contributes to the literature through the identification of demands experienced by these workers, as well as the resources required to meet demands. Contrary to expectations, the experience of demands by waged workers was similar to that of salaried workers. All workers experienced a common set of demands which are driven by industry and organizational cultures. Irrespective of job category, workers will work long hours, overtime, and experience work overload. Therefore, this thesis adds to the body of knowledge by contending that salaried and waged workers should not be treated as two distinct groups with distinct and differing work-life experiences. Instead, workers should be treated as individuals who have varying and unique experiences of work-life interaction, and the emphasis should be at the individual level rather than at the work category level.

11.2.5 Extending models of work-life fit

Voydanoff *(*2007) developed a conceptual model which contends that work-life fit occurs when the individual perceives that he/she has the resources required to meet demands such that role performance is effective. Similarly, the models put forward by Teng and Pitman (1996), DeBord *et al*. (2000), and Brennan *et al.* (2007) emphasise the interactive nature of demands and resources. This thesis contributes to models of work-life fit by challenging the notion that resources are exclusively required to meet demands such that role performance is effective. By applying a systems approach, it is possible that a demand can be managed in a number of different ways. Firstly, a resource may be utilised to assist in managing a demand (resource-to-demand interaction). Alternatively, the conditions of a demand may be altered, so that the interdependent demand is perceived as manageable (demand-to-demand interaction). The complex nature in which demands function within a system adds to the body of knowledge and progresses the work-life fit concept. Furthermore, this thesis raises the possibility that in some circumstances, resources may not be required to meet demands.

The thesis extends models of work-life fit which apply a demands-resource approach through the conceptualization of demand and resource typologies. Two demand typologies were identified through the thesis, and both typologies are associated with the demand-to-demand interaction. Within the construction industry, it is possible that some demands may operate as ‘influencers’ while others may act as ‘creators’. Demands which operate as ‘influencers’ have a major impact on the conditions of the interdependent demand, and it is suggested that if the conditions of the influencing demand change, so too will the conditions of the interdependent demand. In contrast, demands which operate as ‘creators’ generate a new demand and shape the conditions of that demand. It is suggested that if the ‘creator’ is altered or removed, then the resultant demand will also be removed. One resource typology was identified through the thesis, which relates to the resource-to-demand interaction. ‘Enabling resources’ was identified in the thesis, and defined as those resources which ‘enable’ an individual to manage multiple demands across multiple domains. Furthermore, ‘enabling resources’ may also enable an individual to manage multiple demands within a single domain.

As described in Chapter 10, the findings of the research form the basis of a new work-life fit model which applies a demands-resources approach. The major components of the model are: (i) demands and resources; (ii) individual factors influencing demand–resource profiles; (iii) meaning attributed to experience; (iv) work-life fit / mis-fit; and (v) role quality.

11.3 Implications for practice

The findings of the research have implications for employers and workers of the Australian construction industry. These implications relate to: (i) supporting a diverse workforce; (ii) managing work demands in a dynamic system; (iii) supporting health and wellbeing of workers; and (iv) individual assessment of work-life fit.

11.3.1 Supporting a diverse workforce

An understanding of demand-resource profiles of workers at all life stages will assist construction organizations in a number of ways. Firstly, a capacity to provide resources which enable young workers to meet their multiple domain demands may contribute to retention of these workers in the industry. Secondly, an understanding of the demands which workers experience in their family domain will assist organizations to be responsive to the needs of workers as they move through the various family stages. Finally, little is known how workers of the construction industry transitioning to retirement experience demands, and what resources they require to meet these demands. In an aging workforce, it may be prudent of organisations to retain their highly experienced workers, who can pass on knowledge and act as mentors to younger workers. An understanding of demand-resource profiles will assist organizations to retain these highly skilled and knowledgeable workers.

The demands and resources identified in the thesis form the basis on a new human resources tool, which can be used by organizations as a means of supporting the work-life experience of their workers. Given the dynamic nature of demands and resources which constantly change according to life stage, organizations may incorporate this tool into a regular assessment of workers' demands and resources. This assessment may assist in determining what resources are required to meet the demands of the workforce. Such an assessment may form part of the annual performance review. Furthermore, information gleaned from the annual review of workers' demands and resources may be utilised to refine and update the organization's work-life program. Such a review would ensure that the work-life program is responsive to workers' changing needs, and retains its relevance.

As outlined in Chapter 1, the Australian construction industry is faced with a shortage of skilled labour. Australia has an ageing population due to falling birth rates and increased life expectancy. The trend of an ageing population coupled with lower fertility rates functions to reduce the supply of younger workers joining the workforce, leading to a shrinking workforce. These demographic changes will intensify the competition for skilled workers, as experience is lost through retirement and fewer new entrants. Implementing a work-life program which is responsive and relevant to workers needs may provide organisations with a competitive

advantage in the recruitment and retaining of skilled workers. Furthermore, the economic wellbeing of construction organisations is fundamentally linked to skilled workers, as the ability to win bids and deliver projects according to time and cost specifications is only possible with access to these critical resources.

11.3.2 Managing work demands in a dynamic system

An understanding of the work domain as a dynamic and interactive microsystem is an important consideration for construction organizations seeking to create a productive and positive work environment for their workers. In this context, an understanding of the interdependent nature of demands within the work domain is important so as to manage demands and support workers. Organizations which seek to minimise or remove demands perceived as damaging should focus on modifying those demands (such as work overload), which are creating the damaging demands (such as emotional and mental strain). Through the application of a systems approach, organizations have the capacity to treat the cause of damaging demands, thereby alleviating the symptoms, rather than merely treating the symptoms which are likely to re-emerge and cause harm to workers.

11.3.3 Supporting health and well-being of workers

The research revealed that construction organizations may consider providing access to resources which support the health and well-being of workers, through participation in activities which have previously been traded-off due to time constraints. Activities which have been traded-off by workers, due to a high level of work demands, include health and fitness activities, volunteering activities, and social activities. It is possible that the requirement for workers to regularly 'trade-off' activities may have a negative influence upon their health and well-being. Lack of health and well-being has been linked to poor mental, physical and emotional outcomes and is damaging for individuals. Furthermore, poor health and well-being can result in sickness absence for workers. For organizations, therefore, supporting the health and well-being of a workforce is essential to productivity, performance and efficiency (Miller and Haslam, 2009).

11.3.4 Individual assessment of work-life fit

An understanding of demand-resource configurations will help individual workers to evaluate their own work-life fit. Such an understanding may enable individuals to reconfigure their demand-resource profile in cases where mis-fit is perceived. An understanding of their own circumstances will assist workers to plan and manage the resources they need to acquire or retain in order to meet their demands. Furthermore, an understanding of demand-resource

profiles will help individuals to seek employment with an organization which is compatible with their demand-resource profile.

11.4 Further research

Chapter 10 identified areas of future research arising from the study. This section summarises these areas.

Given the importance placed on pride in work and meaning from work by all participants, future research might examine whether these resources interact with demands, such that they contribute to an individual's retention in the construction industry. Furthermore, turnover of workers has been reported to cost 200 percent of a worker's salary (Eaton, 2003), therefore an understanding of resources which support the retention of workers will potentially financially benefit organizations.

The research suggests that as individuals move through the various life stages, family role importance may take precedence during the 'parent' stage as compared to the pre-family stage, and this consequently influences the configurations of demands and resources. Further research which investigates the work-life fit of workers in the construction industry may seek to determine how life stage and role importance interact, and how this might influence demand-resource profiles.

Future research which investigates the experience of demands may seek to investigate how coping skills and strategies contribute to work-life fit, as it is possible that an individual's coping skills and strategies may influence the meaning attributed to the experience of demands. Such an understanding may assist in extending the identification of demands and resources applicable to work-life fit. Furthermore, such an understanding may help to explain the process by which individuals attribute different meanings to a similar experience.

Section 11.5 outlines the limitations of the research, and identifies further research which may address these limitations. These are in addition to the further research identified in this section.

11.5 Limitations

The purpose of Q Methodology is to explore phenomena *a priori.* The aim is to sample the range and diversity of views expressed, not to make claims about the percentage of people expressing them (Brown, 1980; Kitzinger, 1987; Watts and Stenner, 2012). Therefore, the findings from this research cannot be generalised. Given that Q Methodology is used as an

exploratory methodology, its strength lies in its capacity to form new insights and consequently propose hypotheses, which can be investigated using an approach that allows for generalizability of results. Therefore, the inability to generalise results does not present as a significant limitation.

This research focused on the worker as the unit of analysis. Based on the notion that subjectivity plays a critical role in attributing meaning to experience (Barnett, 1998; Dugan, Matthews and Barnes-Farrell, 2011), this does not present as a significant limitation. The perception of work-life fit or mis-fit is assessed by the individual, therefore it is appropriate that the worker is the unit of analysis. However, the work-life fit model contends that an individual's work, family and community demands and resources function within a systems framework (Bronfenbrenner, 1989). Within this framework, microsystems and mesosytems operate within a macrosystem (Pocock *et al*. 2012, Voydanoff, 2007). While this research investigated the microsystems and mesosytems from which the individual functions, it did not investigate macro-level factors such as the international and national economy, and local labour markets. However, it is recognized that these factors may impact on demands and resources. For example, the state of the labour market could influence work-based demands and resource. In cases where there is a shortage of labour, organizations may offer additional resources or alter working conditions which seek to attract and retain workers. In contrast, when there is an over-supply of workers, organizations may not offer such incentives to attract and retain workers.

The findings of the research reveal the complexity of work-life fit and how household structure contributes to the demand-resource experience of individuals. This research focused on the worker as the unit of analysis, which may be considered a limitation of the research. Given that household structure appears to have an influence of work-life fit through the experience and access to demands and resources, further research could explore work-life fit using the household as the unit of analysis. Such an understanding may assist in investigating how the demand-resource profiles of household members interact, and further extend the knowledge of resource-to-demand and demand-to-demand interactions.

A further limitation of the research is the sample used. Participants came from two medium-sized construction organizations based in Melbourne, Australia. Therefore, the results cannot be generalised to other cities within Australia, nor other countries. Furthermore, the construction industry is comprised of large, medium and small construction organisations. Given that the participants of the research worked for medium-sized construction organizations, results cannot be generalised to small and large construction organizations. Additionally, the construction industry is made up of both commercial and domestic sectors.

Within the commercial sector, work is differentiated between building and civil engineering projects. This research investigated workers experience within the commercial building sector, therefore results cannot be generalised to other industry sectors.

It has been recognised that leadership impacts upon the experience of workers (Clarke, 2012; Fisher, 2011; Goleman, 2000), through the clear identification and communication of goals, the structuring and organization of work, and the support and resources required to undertake work activities. Furthermore, various leadership styles have been identified including transactional, transformational and authentic (Hitt, Black and Porter, 2005; Robbins, Judge, Millet and Boyle, 2011). These leadership styles differ according to task behaviours and people behaviours. Task behaviours are associated with planning and scheduling work, developing procedures, and setting performance standards. People behaviours are associated with level of supportiveness and recognition for achievement, and trust and confidence in subordinates (Hitt *et al.* 2005). Furthermore, the use of power (Greenberg, 2010), such as position power, expert power or coercive power, can also impact upon the experience of subordinates. It is possible that work-life experience may be influenced by leadership style, such as through the access to resources originating from the work domain, or through the experience of work-based demands. The impact of leadership style on demand-resource profiles was beyond the scope of this thesis. Future research may seek to investigate how leadership style impacts upon demand-resource experience of workers in the construction industry.

11.6 Self-development through the research experience

Through the research process, new skills were developed and enhanced. This section outlines the learning outcomes of the researcher, which culminated in the publishing and presentation of work.

11.6.1 Preparing for the Doctorate

Preceding the doctorate, research was conducted as part of a Master's program. The research undertaken in the Master's program examined workers' experience of work-life interaction in the construction industry, and was published in a peer-reviewed journal (as referenced below). The research served to prepare the researcher for the doctoral thesis through the learning and application of skills relating to the literature review, identification of the research problem, research methods, and the overall research process. The research also served to introduce the researcher to the work-life literature.

Turner, M., Lingard, H., & Francis, V. (2009). Work-life balance: An exploratory study of supports and barriers in a construction project. International Journal of Managing Projects in Business, 2(2), 94-111.

11.6.2 Developing expertise in Q Methodology

Prior to the application of Q Methodology to the research, there was a requirement to develop a deep understanding of the methodology. A critical review of the literature was undertaken, as outlined in Chapter 4, together with participation in a training course conducted by an academic recognised in the Q Methodology academic community as an expert. Furthermore, a deep understanding of Q Methodology was required so that this approach, which was new to the construction domain as well as the work-life domain, could be defended. This developmental process culminated in the preparation of peer-reviewed conference papers which defended the use of Q Methodology in the construction industry. Furthermore, a range of seminars were presented to academic researchers, which introduced the methodology, as well as defended its use in the thesis. These presentations are outlined in the following sections.

The researcher presented two papers at international conferences, as referenced below. The peer-reviewed papers served to introduce Q Methodology as an appropriate method for use in construction-based research. The papers were developed with the support of the principal thesis supervisor. Participation at the conferences assisted in building knowledge of research methods applied in construction-based research, and to ascertain where Q Methodology was positioned in current research. Furthermore, presenting this work extended the researcher's teaching and communication skills.

Turner, M., Lingard, H., and Francis, V. (2009). The application of a Q-sort methodology to identify and rank strategies to promote work-life balance, health and wellbeing in construction projects, in H. Lingard, T. Cooke and M. Turner (Eds.), Proceedings of the CIBW099 Conference on Construction Occupational Health and Safety, Melbourne, Australia, 21-23 October 2009, pp. 21-29.

Turner, M. and Lingard, H. (2011). Demands and resources of workers in the Australian construction industry: Identification and exploration using Q methodology, in C. Egbu and E. Choen Weng Lou (Eds.), Proceedings of the ARCOM Twenty-seventh Annual Conference, University of the West of England, Bristol, UK, 5-7 September, 2011, pp. 361-370.

In addition to the construction-based conferences, the researcher also attended the 27th Annual International Society for the Scientific Study of Subjectivity (ISSSS) Q Conference, Birmingham, UK, 7 – 9 September 2011. The conference was cross-disciplinary, with representatives from various disciplines including the social sciences, political science, health, and environmental management. All papers presented at the conference had applied Q Methodology. Attendance at this conference was pivotal for the researcher in establishing networks within the Q Methodology research community. Members of the Q community acted as mentors in the initial stages of data entry and analysis. Attendance at the Q conference resulted in building knowledge of Q methodology in terms of Q instrument development, as well as analysis and interpretation skills.

Training in Q Methodology was undertaken at The University of Auckland, New Zealand, on 14 - 15 July 2011. The learning outcome was the development of knowledge in the design of a Q methodological study, and a technical understanding of the software used for analysis. Following participation in the training course, a presentation was made to academic staff on *24 August 2011*. The presentation introduced the methodology to researchers of the School of Property, Construction and Project Management.

11.6.3 Doctoral presentations

It is a university requirement that doctoral students undertake a confirmation of candidature seminar and a completion seminar, which are described below.

The process of confirmation of candidature requires doctoral students to develop a full and substantial proposal of their research, which is then presented to a panel. The panel consisted of the principal supervisor and two academic staff members of the School. The confirmation of candidature presentation was conducted on *29 May 2009.* Along with the panel, all members of the School of Property, Construction and Project Management were invited to attend.

All doctoral candidates are required to make a public presentation of their work, known as a completion seminar, in their final year prior to submitting their thesis. Each completion seminar has a panel consisting of: the candidate's principal supervisor and second supervisor; a member of academic staff in the candidate's discipline area; and the Higher Degree Research coordinator. The completion seminar was conducted on *15 August 2012*. Along with the panel, all members of the School were invited to attend.

Following the seminars, the researcher proceeded with confidence that the research was robust, and that the methodological approach was appropriate to respond to the research problem and research questions. Furthermore, presentation of the seminars contributed to the ability to communicate the thesis topic, as well as inspiring others to consider Q Methodology in their future research endeavours.

11.7 Summary

This Chapter outlined the contribution to knowledge, implications for practice, areas of future research, and limitations of the research. Finally, the Chapter outlined the new knowledge developed by the researcher through the process of undertaking the research and developing the thesis.

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APPENDICES

Appendix 1a

Human Research Ethics approval

Human Research Ethics Sub-Committee
Office of the Pro Vice-Chancellor
Phone: 9925-2974

24 June 2010

Dear Michelle,

Re: Human Research Ethics Application – Register Number CHEAN A-2000314-03/10

Professor Joseph Siracusa, the Deputy Chair of the Design and Social Context College Human Ethics Advisory Network (CHEAN) assessed your amended ethics application entitled: ***"The development and testing of a work-life fit model: a demands and resources approach".*** This approval will be ratified at the Committee's meeting on 16th July 2010.

I am pleased to advise that your application has been approved as Low Risk (Risk Level 2) classification by the committee. This approval will now be reported to the University Human Research Ethics Committee for noting.

This now completes the Ethics procedures. Your ethics approval expires on 31 December 2011.

Please note that all research data should be stored on University Network systems. These systems provide high levels of manageable security and data integrity, can provide secure remote access, are backed on a regular basis and can provide Disaster Recover processes should a large scale incident occur. The use of portable devices such as CDs and memory sticks is valid for archiving, data transport where necessary and some works in progress. The authoritative copy of all current data should reside on appropriate network systems; and the Principal Investigator is responsible for the retention and storage of the original data pertaining to the project for a minimum period of five years.

You are reminded that an Annual /Final report is mandatory and should be forwarded to the College Ethics Subcommittee Secretary by mid-December 2010. This report is available at http://www.rmit.edu.au/browse;ID=6sqqx7sd0wkp or can be located by following the link under Policy at http://www.rmit.edu.au/dsc/chean.

Should you have any queries regarding your application please seek advice from the Deputy Chair of the College Human Ethics Advisory Network (CHEAN) Prof Joseph Siracusa on (03) 9925 1744, joseph.siracusa@rmit.edu.au or contact Lisa Mann on (03) 9925 2974 or email lisa.mann@rmit.edu.au

On behalf of the DSC College Human Ethics Advisory Network I wish you well in your research.

Yours sincerely,

Lisa Mann
Secretary
DSC College Human Ethics Advisory Network

cc: Prof Helen Lingard, School of Property Construction and Project Management

Appendix 5a

Identification and verification of demands

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5.1 INTRODUCTION

Appendix 5a outlines the identification and verification of demands which form part of the Q instrument. Appendix 5a will begin by describing the source of each of the identified demands and their corresponding definitions, as well as outlining participant feedback and final verification of each demand.

5.1.1 Identification of demands

A review of the work-family literature was conducted to identify demands and their corresponding definitions. The following databases were searched: Emerald, Proquest, Business Source Premier (EBSCOhost), Expanded Academic (Gale), ISI Web of Science, and Science Direct (Elsevier). Given that demands are being considered within a work-life fit paradigm, the work-life fit literature was reviewed in the first instance using the following key words: fit, work-life fit, work-family fit, work-home-community fit, demands, work demands, family demands, home demands, and community demands. However, given the limited nature of research in the work-fit domain, the review was then extended to include demands in conjunction with work-life conflict, work-family conflict, role strain, work pressure, work-life interaction, work-family interaction, work-home interaction, and work-home-community interaction.

Through the review process, identified demands were recorded as were the corresponding definitions. In cases where two or more definitions were conflicting or inconsistent, the definition that had been most cited in the literature was recorded. In the instances where no definition was offered in the literature, a definition was developed. As the definitions would be used by workers during a later stage of the research, a conscious decision was made to use plain and simple language. This was particularly critical as the demand descriptions needed to be accessible to all workers irrespective of level of education and literacy ability. Furthermore, definitions were written in the second person such that they included the use of ‘you’ and ‘your’. 'You' language helps creates the sense that the writer is talking directly to the reader so that the reader feels engaged and involved (Nazario, Borchers and Lewis, 2010).

5.1.2 Verification of demands

Verification of demands occurred through consultation with workers engaged in the construction industry. Further information about participants is outlined below. An interview was conducted with each participant at their place of employment during 2010. Each interview took approximately 60 - 90 minutes and participant responses were manually recorded by the researcher (interviewer). The following process took place at each interview:

a) The researcher explained the definition of *work* to the participant. It was important that each participant had a consistent understanding of work in preparation for the next step, in which work demands were reviewed.

> *Work is defined as paid employment (Bardoel et al, 2008; Eby et al. 2005). Work may include unpaid overtime, but does not include unpaid domestic and voluntary work (Pocock et al. 2009). Unpaid domestic work and voluntary work are included in the family and community domains.*

b) The researcher explained the definition of *work demands* to the participant:

> *Work demands are physical, psychological, social, or organisational features originating from work that require physical or psychological effort, which are associated with physiological impacts or psychological impacts (adapted from Bakker et al. 2005).*

c) The participant was asked to review each work demand label and corresponding definition provided by the researcher for clarity of meaning. In cases where the meaning was deemed to be unclear, the participant was asked to suggest an alternate definition. The set of work demands provided to participants is outlined in section 5.2.

d) The participant was asked to identify additional work demands which had not been included on the list provided by the researcher. Where an additional work demand was identified, the participant was asked to define this demand.

e) This process was replicated for family demands, and steps a) to d) were repeated. The set of family demands is outlined in section 5.3.

> *Family is defined as significant people and relationships in a person's private life. Based on this definition, family may extend beyond blood relatives and include close friends (adapted from Pocock et al. 2009).*
>
> *Family demands are physical, psychological, social, or organisational features originating from a person's family that require physical or psychological effort, which are associated with physiological impacts or psychological impacts (adapted from Bakker et al. 2005).*

f) This process was replicated for community demands, and steps a) to d) were repeated. The set of community demands is outlined in section 5.4.

Community is defined as relationships of support and/or interaction between people that might be based on place, shared interest or identity (adapted from Pocock et al. 2009).

Community demands are physical, psychological, social, or organisational features originating from the community that require physical or psychological effort, which are associated with physiological impacts or psychological impacts (adapted from Bakker et al. 2005).

5.1.3 Participants

A panel of workers engaged in the Australian construction industry were invited to participate in an interview. The sampling strategy utilised sought to obtain representation from a wide range of subsets of the construction workforce based on gender, age, occupation, relationship status, parental status and living arrangements. Table 5a-1 outlines the demographic characteristics of participants.

Table 5a-1. Demographic characteristics of participants.

	Gender	Age category	Occupation	Relationship status	Parental status	Living arrangement
1	Male	21 - 30	Graduate Project Engineer	Single	No children	Live with parents
2	Male	51 - 60	Senior Manager	Married	Children over 18	Live with wife and child with a disability
3	Female	31 - 40	Architect	Partner	No children	Live with partner
4	Female	41 - 50	Risk manager	Partner	Two children under 18	Live with partner and children
5	Male	31 - 40	Architect	Single	No children	Live alone
6	Male	51 - 60	Human Resources Manager	Married	Children over 18	Live with wife
7	Male	31 - 40	Human Resources Coordinator	Married	No children	Live with wife
8	Female	31 - 40	Quality and Safety Coordinator	Married	Two children under 18	Live with husband and children
9	Female	21 - 30	Health and Safety Coordinator (part time)	Partner	No children	Live with friends

5.2 WORK DEMANDS

This section describes the work demands and corresponding definitions identified through the literature review, outlines additional demands identified by participants, and describes participants' feedback on the demand definitions. Eighteen work demands are outlined below. Work demands are differentiated from family and community demands by the identifier 'WD'.

5.2.1 Time in paid work (WD01)

Source

Voydanoff (2007) referred to 'time in paid work' as a time-based demand originating from the work domain, however no definition was provided. Likewise, various work-life researchers have referred to hours worked but have neglected to clearly articulate what is implied by this term (Barnett, 1998; Boyar *et al*. 2008; Burton and Turrell, 2000; Pittman, 1994). Geurts *et al.* (2009) note that research on the effects of work-based time demands have tended to focus on global measures of working time, such as the total number of hours spent on work, and that usually no distinction is made among the effects of the number of hours worked according to one's contract ('contractual hours'), the number of hours worked overtime ('overtime hours'), and the number of hours spent on travelling to and from home ('commuting hours'). By using global measures, Geurts *et al*. (2009, p.230) argue that "*the specific and potentially differential effects of certain types of work-related hours have largely been ignored*". The International Labour Organization (ILO) (2012) differentiates between 'normal hours of work' and 'hours actually worked'. Normal work hours refers to the hours which workers are expected to spend on work activities during a short reference period such as one day or one week, as stipulated in laws or regulations, collective agreements or arbitral awards, or establishments' rules or customs. Hours actually worked refers to the hours that workers spend on work activities during a specified reference period. In line with the argument put forward by Geurts *et al.* (2009), a distinction was made between the different types of work-based time demands including time in paid work, commuting time, non standard working schedule, and over time hours.

Definition

Drawing on the ILO's (2012) definition of hours actually worked, time in paid work was defined as: "*The time you spend working. This includes time spent at your work location as well as at home on work related tasks. This does not include commuting*

time to and from work". Commuting time was specified as a separate and distinct demand.

Participant verification of definition

One participant commented that commuting may occur during working time. In these instances is was agreed that this would be counted as working time, as the worker was not travelling to and from home, rather to and from multiple work sites.

5.2.2 Commuting time (WD02)

Source

Voydanoff (2007) referred to 'commuting time' as reflecting the duration of the daily transition between work and the family and community domains. Pocock *et al.* (2009) referred to 'long commutes' as a demand but provided no further detail.

Definition

Using the definition from Voydanoff (2007), commuting time was defined as*: "Length of your daily commuting time between work and home".*

Participant verification of definition

One participant commented that commuting between work and home may include a stop inbetween, such as picking up a child from childcare. It was subsequently agreed that this could be incorporated into the current definition, and that the definition therefore did not require re-wording.

5.2.3 Non-standard work schedule (WD03)

Source

Non-standard work schedule has been defined as working during evenings, at night, or on weekends (Strazdins, Clements, Korda, Broom and D'Souza, 2006; Voydanoff, 2007). Presser (2000) refers to non-standard schedules as shift work and weekend employment, and Pocock *et al.* (2009) refer to 'unsocial hours' as a work demand however it is not clear whether this refers to non-standard work schedules.

Definition

Using definitions from Presser (2000), Strazdins *et al.* (2006) and Voydanoff (2007), non-standard work schedule was defined as*: "You work during the evening, night or weekend. Often referred to as shift work".*

Participant verification of definition

One participant suggested that the definition should be extended to include work undertaken in the morning prior to the commencement of the standard working day. It was considered that this was unpaid overtime, and therefore the definition was not amended. All other participants perceived that this definition was clear and that no changes were required.

5.2.4 Work over-load (WD04)

Source

Voydanoff (2007, p.51) referred to workload pressure as a strain-based job demand, and defined it as existing "*when employees work very hard over a period of time to maintain a workload that is considered excessive"*. Peeters *et al*. (2005, p.45) referred to a similar concept which was labelled as 'quantitative job demands', defined as "*work overload, work pressure or too much to do in too little time*". Reilly (1982, p.407) referred to role over-load as "*a type of role conflict that results from excessive demands on the time and energy supply of an individual* ". This definition is somewhat ambiguous as it focuses on the outcome of the demand rather than clearly articulating what the demand is, however has been used in recent studies (for example, Pitt-Catsouphes *et al*. 2007). Melchior, Berkman, Niedhammer, Zins and Golberg (2007) refer to psychological demands as including workload and time pressures, however provide no further explanation or definition of these demands.

Definition

Drawing on definitions from Peeters *et al.* (2005) and Voydanoff (2007), work over-load was defined as*: "Not enough time to complete your assigned work duties. You work hard over a period of time to maintain a work load that you consider excessive*".

Participant verification of definition

Initially, the second sentence of the initial definition was worded as "*You work hard over a period of time to maintain a work load that is considered excessive*". One participant noted that this description was vague as it was not clear whether the workload was considered excessive by the worker or by someone else. The participant suggested that the following amendment be made *"….a workload that you consider excessive*". The definition was amended accordingly, and there was subsequent agreement amongst participants that this definition was clear and that no additional changes were required.

5.2.5 Overtime hours (WD05)

Source

The International Labour Organization defines overtime as time worked in addition to hours worked during normal periods of work, and which are generally paid at higher than normal rates (Organisation for Economic Co-operation and Development, 2001). Similarly, Geurts *et al.* (2007) refer to overtime hours as hours worked beyond a worker's contractual hours. Lingard and Francis (2004) highlight that construction-based waged workers are paid for the over time hours worked, while salaried workers do not receive payment for working hours beyond their standard work time.

Definition

The definition put forward by Geurts *et al.* (2007) was used as a basis for the definition of overtime hours. Given that research participants would be both waged and salaried workers, the definition of overtime was extended to provide context for these two groups of workers. Overtime hours was defined as "*Hours worked over and above your standard work week. Overtime hours may be paid or unpaid and this will depend on your work arrangement with your employer*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.2.6 Job insecurity (WD06)

Source

The concept of job insecurity has been defined in different ways within the work-life literature. Some studies have adopted a global view, in which job insecurity is considered as an overall concern about the continued existence of the job in the future (De Witte, 1999). Similarly, Voydanoff (2007) defined job insecurity as the perceived likelihood of involuntary job loss. Others consider job insecurity as a multifaceted concept, encompassing aspects such as the perceived threat to various job features and the individual's ability to counteract these threats (Ashford, Lee and Bobko, 1989; Rosenblatt & Ruvio, 1996). For example, job features may include opportunities for promotion and freedom to schedule work. The more features that an individual perceives to be threatened, the greater the job insecurity. A global concept of job insecurity was applied in the research, as individual job features were included as separate demands, such as emotional strain at work (WD09).

Definition

The definition of job insecurity was taken from Voydanoff (2007), and defined as: "*Perceived likelihood of involuntary job loss*".

Participant verification of definition

One participant suggested that the definition be amended to include perceived likelihood of involuntary job loss, demotion, or perception of not being valued. All other participants considered that the definition was clear and that no changes were required, therefore no amendments were made to the initial definition.

5.2.7 Overnight travel for work (WD07)

Source

Voydanoff (2007) defined overnight travel for work as being away from home the whole night whereby alternative accommodation is required. Gustafson (2006) referred to work-related overnight travel as long-distance journeys involving at least one overnight stay away from home.

Definition

Drawing on the definitions put forward by Voydanoff (2007) and Gustafson (2006), overnight travel for work was defined as "*Being away from home the whole night (whereby alternative accommodation is required)".*

Participant verification of definition

One participant suggested that a frequency be added to the definition: "*Being away from home for more than one night"*. It was considered that adding a frequency to the definition could impact on the way in which the demand was ranked in the Q-sort. By adding a frequency to the demand, the response would be based on the frequency of the demand, rather than the subjective experience of the demand. It was considered that adding frequencies to demand definitions could force an answer rather than tapping into subjective views and perceptions. For example, if an individual spent one night away for work, this may be experienced as a large demand, however another individual may experience it as a low demand.

5.2.8 Work activities at home (WD08)

Source

Voydanoff (2007) identified work activities at home as a work-based demand. Work activities can be undertaken at home in a number of ways. Workers may work from

home, bring work home at the end of the day or on weekends, or may be contacted at home by supervisors, workers or clients.

Definition

Using Voydanoff's (2007) description of work activities at home as a basis, the following definition was developed: *"Being contacted at home by your supervisors, co-workers or clients".*

Participant verification of definition

The first draft of the definition was based on Voydanoff's (2007) description as follows: "*Bringing your work home at the end of the day or on weekends, or being contacted at home by supervisors, co-workers or clients".* Through the process of reviewing demands, it became apparent that this definition was not mutually exclusive, and intersected with the 'over time hours' demand. This issue was raised by a number of participants. Based on this feedback, and the requirement to ensure all demands were mutually exclusive, the definition was modified to exclude "*Bringing your work home at the end of the day or on weekends".* Once this modification was made, there were no further suggestions for amendment by participants, as they considered the definition clear and did not intersect with the other demands.

5.2.9 Emotional strain at work (WD09)

Source

Emotional job demands have been identified in the work-life domain as strain-based work demands (Montgomery, Peeters, Schaufeli and Ouden, 2003; Peeters, Montgomery, Bakker and Schaufeli, 2005). Peeters *et al*. (2005, p.45) describe emotional job demands as "*the affective component of work and the degree to which one's work puts one in emotionally stressful situations*".

Definition

Peeters *et al*. (2005) description was used as the basis for definition: "*You experience stress and tension while undertaking your work activities*".

Participant verification of definition

The first draft of the definition was based on Peeters *et al*. (2005) description: "*Emotionally stressful work situation*". Two participants suggested that "*emotionally*" be deleted from the definition and be replaced by "*stress and tension*" so as to better capture the meaning of the demand. In response to this feedback, the definition was amended, and subsequently no further amendments were suggested.

5.2.10 Physical strain at work (WD10)

Source

Given the emphasis on white-collar workers in the work-life domain, the issue of physical strain at work has been given little attention as this is perceived as primarily an issue impacting blue-collar workers. Lautsch and Scully (2007) identified physical work as a demand impacting upon work-life interaction of the working-class, although no definition was offered.

Definition

As no definition was clearly outlined in the work-life literature, the following definition was developed: "*You undertake physically tiring work".*

Participant verification of definition

The first definition put forward to participants was "*Physically tiring work".* Participants suggested that the definition be amended so that it was consistent with other demands which used 'second person' language. Based on this feedback the definition was amended, and subsequently, no further changes were suggested by participants.

5.2.11 Mental strain at work (WD11)

Source

Melchior *et al*. (2007) identified 'time pressure' as a psychological work-based demand, while similarly, Peeters *et al.* (2005, p.45) referred to a mental job demand as "*the degree to which work tasks call on a person to expend sustained mental effort in carrying out his or her duties*".

Definition

Drawing on both Melchior *et al.* (2007) and Peeters *et al*. (2005) definitions, mental strain at work was defined as: "*You experience sustained concentration due to challenging / difficult work, or are pressured to undertake a task within a very limited amount of time".*

Participant verification of definition

The first definition put forward to participants was "*Sustained concentration due to challenging / difficult work".* One participant suggested that the definition be expanded to include time-constrained work, whereby there is a limited amount of time to complete an assigned task. Another respondent suggested that the definition be written in the second person so as to ensure consistency across definitions.

In response to feedback, the definition was amended, and a second definition was put forward to participants: "*You experience sustained mental effort due to challenging / difficult work, or are pressured to undertake a task within a very limited amount of time".* Participants were asked whether they preferred "sustained concentration" or "sustained mental effort" and it was agreed that "sustained concentration" was a clearer descriptor. Based on this feedback the definition was amended, and subsequently, no further changes were suggested by participants.

5.2.12 Industry expectations (WD12)

Source

Lingard and Sublet (2002) reported that the Australian construction industry is a demanding work environment in which workers are expected to work long hours, and non-standard work schedules including weekend work. Industry expectation as a specific work-based demand, however, has received little attention in the work-life domain.

Definition

Based on Lingard and Sublet's (2002) description of the construction industry, industry expectation was defined as: "*The industry in which you work places expectations on you, such as long working hours".*

Participant verification of definition

The initial definition put forward to participants was: "*The expectations the industry places on workers, such as a long working hours culture"*. A number of participants suggested that the definition be written in the second person so as to ensure consistency across definitions. Furthermore, it was considered that the word '*culture*' be excluded from the definition, as '*long working hours'* was clear. In response, the definition was amended and the second definition was put to participants, of which no further amendments were suggested.

5.2.13 Organizational expectations (WD13)

Source

Organizational culture is "*a mechanism for reproducing existing patterns of behaviors, since it is based on shared values, beliefs and schemas*" (Nikandrou, Panayotopoulou and Apospori, 2008, p. 581). Workers share common values, beliefs and assumptions about what is wrong and right, effective and ineffective, based on the dominant organizational cultural values and therefore, organizational culture shapes beliefs and expectations about role demands and how to meet them (Nikandrou *et al*. 2008). In

considering the target sample, it was considered that the use of the term 'organizational expectations' rather than 'organizational culture' was more accessible to all participants, particularly blue-collar and site-based construction workers.

Definition

Based on Nikandrou *et al's* (2008) description of organizational culture, organizational expectations was defined as "*The organization places expectations on you, such as long working hours, communication style, dress code, decision making".*

Participant verification of definition

The initial definition put forward to participants was: "*The expectations the organization places on the worker, such as long working hours culture, communication styles, dress code, decision making*". Based on the decision to write definitions in the second person, the definition was amended accordingly. Furthermore, it was considered that the word 'culture' be excluded from the definition, as 'long working hours' was clear. The second definition was reviewed by participants and no further amendments were suggested.

5.2.14 Supervisor expectations (WD14)

Source

The literature refers to lack of supervisor support (O'Driscoll, Poelmans, Spector, Kalliath, Allen, Cooper and Sanchez, 2003) and unsupportive supervision (Pocock *et al.* 2009) as possible work-based demands. However, supervisor support has commonly been conceptualised as a resource (for example, Bakker *et al*. 2007; Dolcos and Daley, 2009; Valcour, Ollier-Malaterre, Matz-Costa, Pitt-Catsouphes and Brown, 2011) and was therefore included in the set of resources. The expectation which is placed on a worker by their supervisor may be considered as a strain-based demand, however little exploration of this demand has occurred. Given the exploratory nature of the research, it was considered that this demand would be included in the set of demands.

Definition

As no definition was clearly outlined in the work-life literature, the following definition was developed: *"Your supervisor places expectations on you".*

Participant verification of definition

The initial definition put forward to participants was "*Your supervisor places demands on you, which may take the form of tight deadlines, or unexpected/unplanned work".*

Feedback provided by participants suggested that this definition was too narrow and specific, and that consideration should be given to keeping it more open. In response, the definition was amended accordingly and reviewed by participations. No further amendments were suggested.

5.2.15 Co-worker expectations (WD15)

Source

Co-worker expectations, as a possible work-based demand, has received minimal attention in the work-family literature. In the literature, co-worker support is most commonly referred to as a work-based resource, however it is not known whether co-worker expectations translate into a work-based demand. Given the exploratory nature of the research, it was considered that this demand merits further attention in the context of exploring industry, organizational and supervisor expectations as potential demands experienced by workers.

Definition

As no definition was clearly outlined in the work-life literature, the following definition was developed: "*Your co-workers place expectations on you".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.2.16 Interpersonal conflict at work (WD16)

Source

Voydanoff (2007) referred to marital conflict as a form of interpersonal conflict originating from the family domain. However, interpersonal conflict originating from the work domain has received little attention in the work-life literature. Given the exploratory nature of the research it was considered that this demand merited further attention, given that the construction industry in known as a high-conflict work place (Loosemore, Nguyen and Denis, 2000; Whitfield, 2012).

Definition

The following definition was developed: "*You experience conflict at work with internal stakeholders (colleagues, co-workers, supervisor, manager) and external stakeholders (customer, supplier)".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.2.17 Project characteristics (WD17)

Source

The impact of project characteristics on work-life interaction has received minimal attention in the work-life literature. Within the construction industry, Lingard *et al.* (2010b) found that work leading up to a major project milestone had a negative impact upon the work–life experiences of project-based workers. Given this finding, it was considered valuable to explore the likelihood of project characteristics as a possible work-based demand experienced by workers.

Definition

As no definition was clearly outlined in the work-family literature, the following definition was developed: "*Projects impact your work through factors such as program changes, program acceleration, unplanned activities and geographical remoteness of the project".*

Participant verification of definition

The initial definition reviewed by participants was "*The unique characteristics of a project such as a fixed end date, milestones, and fixed cost*". One participant suggested that "*program changes and acceleration*" be added to the definition. Another participant suggested that "*unplanned activities*" be added to the definition. Another participant suggested that "*location of project, unplanned travel and remoteness of project*" be added to the definition. "Unplanned travel" was not included in the definition, as it was subsequently agreed that it was captured in the commuting time work-based demand (WD02). All other suggestions were incorporated into the revised definition. Additionally, based on the assumption that all definitions would be written in the second person, the definition was re-worded accordingly. All participants perceived that the revised definition was clear and that no further changes were required.

5.2.18 Undertaking training and education for work (WD18)

Source

Undertaking training and education for work was not identified as a work-based demand in the work-family literature, and therefore was not initially included in the set of work demands.

Definition

As this demand had not been identified in the literature, the following definition was developed in consultation with participants: "*During work time you undertake formal training and education for work-related purposes. This may take place at work, TAFE, university, or an accredited training organization".*

Participant verification of definition

Undertaking training and education during personal time (FD13) had been identified as a demand, and a number of participants suggested that "undertaking training and education for work" be added as a work-based demand. The participants developed the initiation definition: "*You undertake formal training and education for work related purposes, during work time. This may take place at work, TAFE, university, or an accredited training organization*". Another participant suggested that the definition start with the term "*during work time*" so as it was clear upfront that this activity occurred during work time. Based on participant feedback, the definition was revised, and no subsequent amendments were suggested.

5.3 FAMILY DEMANDS

This section describes the family demands and corresponding definitions identified through the literature review, outlines additional demands identified by participants, and describes participants' feedback on the demand definitions. Seventeen family demands are outlined below, as identified by the prefix 'FD'.

5.3.1 Time caring for your children (FD01)

Source

Voydanoff (2007) identified time caring for children as a time-based family demand, and Pocock *et al.* (2009) identified dependent children as a family demand.

Definition

Using Voydanoff's (2007) definition as a basis, the following definition was developed: "*Time you spend caring for your own children".*

Participant verification of definition

One participant suggested that the type of care may be emotional or physical, however it was agreed by participants that the definition did not require amendment as this was implied. Furthermore, emotional and physical care most often occur simultaneously. Other than this, no further comments or feedback were provided by participants.

5.3.2 Time caring for your relatives children (FD02)

Source

Demands originating from a worker's extended family and their impact upon work-life interaction are not well understood. Pocock *et al.* (2009) identified an unsupportive extended family, and unsupportive inaccessible grandparents as family-based demands. These 'demands', however, are considered as a lack of resources according to the definition of demand and resource used in this research.

Definition

As no definition was clearly outlined in the work-family literature, the following definition was developed: "*Time you spend caring for children of your extended family*".

Participant verification of definition

The initial definition reviewed by participants was: "*The time you spend caring for your relatives / extended family's children"*. Participants suggested that "*relatives*" be deleted

from the definition, as it was part of the demand label and did not need to be repeated. The definition was amended and no further changes were identified by participants.

5.3.3 Time caring for your friends children (FD03)

Source

Voydanoff (2007) referred to friend support as a resource, however it is not known how workers experience demands originating from their friends. Given the exploratory nature of the research, it was considered that this demand merited further attention in the context of workers' work-life experiences.

Definition

As no definition was clearly outlined in the work-family literature, the following definition was developed: "*Time you spend caring for friends children*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.3.4 Time caring for relatives (FD04)

Source

Caring for dependent parents and grandparents was identified by Pocock *et al.* (2009) as a family demand, while Voydanoff (2007) also identified time caring for elderly parents as a time-based family demand. It is acknowledged that the notion of relative care varies across cultures, particularly the expectations and obligations placed on family members which may be a function of cultural norms. For example, Wharton and Blair-Loy (2006, p.421) explain that "*the strong ties of family support in Chinese societies are also intense ties of family obligation to adult siblings and, especially, parents. For example, when the elderly require special care, daughters-in-law and daughters, as well as adult sons, are expected to be their caregivers".* During the post-sort interview, the subjective experience of demands were explored, and issues such as cultural norms associated with caring responsibilities could be described by participants.

Definition

While Voydanoff's (2007) defined 'time caring for elderly parents' as a time-based family demand, the definition used in this research was extended to include relatives, irrespective of age of relative. On this basis, the following definition was developed:

"*Time you spend caring for your extended family (including parents, grandparents, aunts and uncles)"*.

Participant verification of definition

The initial label of the demand was "Time caring for elderly relatives", and this was defined as: "*The time you spend caring for elderly relatives (including parents, grandparents, aunts and uncles).*" Some participants suggested deleting the word "*elderly*" so that the demand was not only limited to elderly relatives. Another participant noted that the type of care may be emotional or physical, however it was agreed that the definition did not require amendment based on type of care, as this was implied. Other than this, no further comments or feedback were provided by participants.

5.3.5 Time caring for pets (FD05)

Source

'Time caring for pets' was not identified as a time-based family demand in the work-family literature, and therefore was not initially included in the list of family demands, however was added at the suggestion of participants.

Definition

As this demand had not been identified in the literature, the following definition was developed in consultation with participants: "*Time you spend caring for your pets. This may include feeding, washing and exercising*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.3.6 Time in household tasks (FD06)

Source

Voydanoff (2007) identified time in household work as a time-based demand originating from the family domain, however it is largely unknown how time in household tasks impacts upon workers' work-life experiences. The literature identifies 'unfairness in the division of domestic chores', however this is considered a strain-based demand and is considered separately (refer to FD09).

Definition

Based on Voydanoff's (2007) description, the following definition was developed: "*Time you spend doing household chores such as cooking, cleaning, laundry, gardening*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.3.7 Household relationship conflict (FD07)

Source

Voydanoff (2007) referred to marital conflict as a strain-based demand originating from the family domain, and Pocock *et al.* (2009) referred to an unsupportive partner as a demand originating from the family domain.

Definition

Drawing on Voydanoff's (2007) and Pocock *et al's* (2009) description, household relationship conflict was defined as: "*You experience conflict with the people you live with. This may be your wife, husband, boyfriend, girlfriend, parents, children, housemate".*

Participant verification of definition

The initial label of the demand was 'relationship conflict', defined as: "*Conflict experienced with your spouse (wife/husband) or partner*". One participant suggested that this definition be extended so that it was relevant for singles. Another participant suggested that the definition be revised so that it centred on home-based conflict, irrespective of relationship status. The definition was subsequently revised, and no further suggestions for amendment were received from participants.

5.3.8 Child with a disability (FD08)

Source

Voydanoff (2007, p.59) identified 'children's problems' as a strain-based demand originating from the family domain and described this demand as "*children experience physical, emotional or behavioral problems*". Brennan *et al.* (2007) and Rosenzweig, Brennan, Huffstutter and Bradley (2008) also refer to caring for a child with emotional, behavioral or mental health disorders as a both a time-based and strain-based demand originating from the family domain.

Definition

Drawing on Voydanoff's (2007) description, the following definition was developed: "*Your child has a physical, intellectual, emotional or behavioral disability and requires your help and support*".

Participant verification of definition

The initial label of the demand taken from Voydanoff (2007) was "children's problems", and defined as "*Your child /children experience physical, intellectual, emotional or behavioural issues*". This demand description lacked clarity for some participants. It was unclear whether the children's issue was a permanent or temporary episode. For example, one participant interpreted this demand as including a teenager who was "going through a bad phase". As this demand specifically referred to children with chronic illness or disability, the demand label was amended to "child with a disability" and the definition was amended according to feedback received from participants. After the demand label and definition had been amended, participants did not raise further queries in relation to the clarity and meaning of the demand.

5.3.9 Unfairness in household work (FD09)

Source

Unfair division of domestic labour was identified as a strain-based family demand by various researchers, such as Pocock *et al.* (2009) and Voydanoff (2007). Clarke *et al.* (2004, p.125) refer to the distribution of household chores as a "*highly emotional subject*", especially in cases where there is dissatisfaction with that distribution.

Definition

Drawing on Voydanoff's (2007) description, unfairness in household work was defined as: "*You perceive there is unfairness in household work, whereby you unwillingly carry the majority of the load*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.3.10 Commuting time (FD10)

Source

Voydanoff (2007) identified commuting time as a boundary-spanning demand whereby there is a transition between domains, and therefore defines it both as a family demand as well as a work demand (refer to WD02).

Definition

Drawing on Voydanoff's (2007) description, the following definition was developed: "*The length of your daily commuting time between home and work*".

Participant verification of definition

While participants understood the difference between commuting time originating from the family domain as opposed to commuting time originating from the work domain, it suggested that this demand was not required and that WD02 sufficiently covered this demand. Based on overwhelming feedback from participants, this demand was excluded from the final set of demands.

5.3.11 Family activities at work (FD11)

Source

Voydanoff (2007) identified 'family activities at work' as a boundary-spanning demand originating from the family domain. Voydanoff (2007, p.102) explained that various types of family activities may be performed at work, such as "*receiving telephone calls and e-mails from family members, discussing family issues at work with coworkers, and performing family activities such as paying bills, making appointments, and online shopping*".

Definition

Drawing on Voydanoff's (2007) description, the following definition was developed: "*Receiving calls or emails from your family members, paying bills, making appointments while at work".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.3.12 Health and fitness activities (FD12)

Source

Undertaking health and fitness activities was not identified as a demand in the work-family literature, and therefore was not initially included in the list of work demands.

Definition

As this demand had not been identified in the literature, the following definition was developed in consultation with participants: "*Time you spend in health and fitness*

related team activities such as football and tennis, or individual activities such as gym and running".

Participant verification of definition

Four participants suggested that "health and fitness activities" be added as a demand. Based on suggestions from participants, a definition was developed. The definition was reviewed by participants and no changes were suggested.

5.3.13 Undertaking formal training and education (FD13)

Source

Undertaking formal training and education during personal time was not identified as a demand in the work-family literature, and therefore was not initially included in the list of demands. This demand is in contrast to the work-based demand 'undertaking training and education for work (WD18)' which assumes that activities occur during work time as compared to personal (family) time.

Definition

As this demand had not been identified in the literature, the following definition was developed in consultation with participants: "*Undertake formal training and education for self development in your own time (rather than work time). This may take place at a TAFE, university, or an accredited training organization"*.

Participant verification of definition

The first definition reviewed by participants was "*Undertaking formal training and education. This may take place at a TAFE, university, or an accredited training organization*". One participant suggested that "*self development*" be added to the definition, while another participant suggested that "*unpaid*" be added to the definition to differentiate that the activity occurred outside of paid work time. Based on participant feedback, the definition was amended and no subsequent changes were suggested.

5.3.14 Participating in self-interest activities (FD14)

Source

Participating in self-interest activities was not identified as a demand within the work-life literature, and therefore was not initially included in the list of demands.

Definition

As this demand had not been identified in the literature, the following definition was developed in consultation with participants: "*You undertake courses or classes related*

to your interests and hobbies, such as photography, learning a new language, or cooking. You may also participate in interest groups or clubs such as chess or astronomy".

Participant verification of definition

A number of participants suggested that "*participating in self-interest activities*" be added as a demand, as an extension to "undertaking formal training and education (FD13)". FD13 focuses on undertaking formal education in personal (family) time, while FD14 focuses on undertaking self-interest activities in personal (family) time. Based on suggestions from participants, a definition developed. The definition was reviewed by participants and no changes were suggested.

5.3.15 Time supporting your children's activities (FD15)

Source

Time supporting children's activities was not initially identified as a demand within the work-life literature, and therefore was not included in the list of demands.

Definition

As this time-based family demand had not been identified in the literature, the following definition was developed in consultation with participants: "*Time you spend supporting your children in the activities they undertake, such as watching them play sport or driving them to sports practice*".

Participant verification of definition

A number of participants suggested that this demand be added to the set of demands. Based on suggestions from participants, a definition was developed. The definition was reviewed by participants and no changes were suggested.

5.3.16 Time supporting your grandchildren's activities (FD16)

Source

Time supporting grandchildren's activities was not identified as a demand within the work-life literature, and therefore was not initially included in the list of demands.

Definition

As this time-based family demand had not been identified in the literature, the following definition was developed in consultation with participants: "*Time you spend supporting*

your grandchildren in the activities they undertake, such as watching them play sport or driving them to sports practice".

Participant verification of definition

A number of participants suggested that this demand be added to the set of demands. Based on suggestions from participants, a definition was developed The definition was reviewed by participants and no changes were suggested.

5.3.17 Time in social activities (FD17)

Source

Time in social activities was not identified as a demand within the work-life literature, and therefore was not initially included in the list of demands.

Definition

As this time-based family demand had not been identified in the literature, the following definition was developed in consultation with participants: "*The time you spend socializing with other people*".

Participant verification of definition

A number of participants suggested that this be added to the set of demands. Based on suggestions from participants, a definition was developed. The definition was reviewed by participants and no changes were suggested.

5.4 COMMUNITY DEMANDS

This section describes the community demands and corresponding definitions identified through the work-life literature review, outlines additional demands identified by participants, and describes participants' feedback on the demand definitions. Nine community demands are outlined below, as identified by the prefix 'CD'.

5.4.1 Time allocated to volunteering (CD01)

Source

Within the work-life literature, Voydanoff (2007) identified time in volunteering as a time-based community demand. Voydanoff (2007) described volunteering activities as youth based, community based and professional based. Volunteering Australia (2009) defines volunteering as "*an activity which takes place through not for profit organisations or projects, and is undertaken to be of benefit to the community and the volunteer of the volunteer's own free will and without coercion; for no financial payment; and in designated volunteer positions only*".

Definition

Drawing on both Voydanoff's (2007) and Volunteering Australia's (2009) description of volunteering, the following definition was developed: "*Time you spend in non-paid work, such as youth activities, community organizations or professional organizations*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.4.2 Emotional strain in volunteering (CD02)

Source

While Voydanoff (2007) referred to volunteering as a time-based demand, little consideration has been given to volunteering as a strain-based demand. The range of volunteering roles is vast, ranging from working in a community garden or a second hand charity store, which could be perceived as low-strain activities, through to volunteering as a foster parent or working for a Country Fire Authority, which could be perceived as high-strain activities. Given the exploratory nature of the research, it was considered that this demand merited further attention in the context of strain-based community demands experienced by workers.

Definition

As this strain-based community demand had not been identified in the literature, the following definition was developed: "*Volunteering activities you undertake are tense and stressful. For example, volunteering for the Country Fire Authority may be more tense and stressful compared to volunteering in a community garden".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.4.3 Time in religious and faith activities (CD03)

Source

While religion has received some attention in the work-family literature (Ammons and Edgell, 2007; Jacob, 2008; Sharabi and Harpaz, 2011), it is not known how religion fits into a demand-resource framework. Given the exploratory nature of the research, it was considered that this demand merits further attention in the context of time-based community demands.

Definition

As this time-based demand had not been identified in the literature, the following definition was developed: "*Time allocated to activities required of you by your religious group, such as attending the place of worship".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.4.4 Hours and schedule of health, welfare and community services (CD04)

Source

Voydanoff (2007) identified hours and schedule of community services and schools as a demand originating from the community. Given the exploratory nature of the research, the two components of the identified demand, community services and schools, were framed as separate demands. Hours and schedule of schools was defined as a separate community-based demand (refer to CD05).

Definition

Using Voydanoff's (2007) description as a basis, the following definition was developed: "*The hours of health and welfare community services which you, or the people you care for, require are incompatible with your paid work hours*".

Participant verification of definition

The initial demand label was "hours and schedule of community services" which was defined as: "*Hours of community service organizations which you require are incompatible with your paid work hours, such as special care facilities for children with special needs, or elderly care*". Some participants were unclear on the meaning of "community service organizations" and suggested that this be made clearer. Other participants suggested that "health and welfare" be added to the demand label to differentiate this demand from the other demands which focussed on education services and self-interest courses. Based on suggestions from participants, the definition was revised. The revised definition was reviewed by participants and no further changes were suggested.

5.4.5 Hours and schedule of schools (CD05)

Source

Voydanoff (2007) identified hours and schedule of community services and schools as a demand originating from the community. This demand focussed specifically on the schedule of schools. Barnett and Gareis (2009) also identified the hours and schedule of school as a community-based demand. Barnett and Gareis (2009, p.1014) contend that "*if school schedules (e.g., start and end times, schedule of parent conferences and school events) can better accommodate the schedules of working fathers (and most likely mothers), they may become a community resource that ameliorates some of the stress such parents would otherwise experience*".

Definition

Using Voydanoff's (2007) description as a basis, the following definition was developed: "*The hours of school are incompatible with your paid work hours, making it difficult for you to provide personal care for your children outside of school hours*".

Participant verification of definition

The initial definition reviewed by participants was: "*The hours of schools are incompatible with your paid work hours, making it difficult for working families to provide care for children outside of school hours".* One participant suggested that

"personal care" be added to the definition, and this was incorporated into the revised definition. No further amendments were suggested by participants.

5.4.6 Limited or no access to public transport (CD06)

Source

Limited or no access to public transport has been recognised in the work-life literature as a demand originating from the community (DeBord, Canu and Kerpelman, 2000; Pocock *et al*. 2009).

Definition

Drawing on DeBord *et al's* (2000) and Pocock *et al's* (2009) description, the demand was defined as: "*You have limited or no access to public transport, such as buses, trains and trams".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.4.7 Hours and schedule of self-interest courses and groups (CD07)

Source

Hours and schedule of self-interest courses and groups was not identified as a demand within the work-life literature, and therefore was not initially included in the list of demands.

Definition

As this time-based demand had not been identified in the literature, the following definition was developed in consultation with participants: "*The hours of courses or groups related to your interests and hobbies are incompatible with your paid work hours*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.4.8 Hours and schedule of training and education organizations (CD08)

Source

Pocock *et al.* (2009, p. 10) referred to "limited local education" and "poor local facilities" as a cross-domain demand, however it is not clear whether this is due in part to an incompatibility with working hours. Hours and schedule of training and education organizations has received little attention within the work-life literature, and therefore was not initially included in the list of demands. It was, however, included at the suggestion of participants.

Definition

As this time-based demand had not been identified in the literature, the following definition was developed in consultation with participants: "*The hours of training and education organizations which you require access are incompatible with your work hours*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

5.4.9 Undertaking parent-based pre-school or school related activities (CD09)

Source

Undertaking parent-based pre-school or school related activities has received little attention in the work-life literature, and therefore was not initially included in the set of demands, however was included at the suggestion of participants. Recently, Barnett and Gareis (2009) identified undertaking parent-based pre-school or school related as a community-based demand.

Definition

The following definition was developed in consultation with participants: "*You participate in formal pre-school or school related activities such as parent-teacher interviews, tuckshop duty, fundraising activities*."

Participant verification of definition

A number of participants suggested that this demand be added to the set of demands. Based on suggestions from participants, a definition was developed. The definition was reviewed by participants and no changes were suggested.

5.5 SUMMARY

Appendix 5a outlined the source from which work, family and community demands were identified, and specified whether they had originated from the literature or at the suggestion of participants. Participant feedback of each demand was outlined, and the final demand label and description was stated. The output of the verification process was the set of demands which was used as part of the Q instrument.

Appendix 6a

Identification and verification of resources

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6.1 INTRODUCTION

Appendix 6a outlines the identification and verification of resources which formed part of the resources instrument. Appendix 6a will begin by describing the source of each of the identified resources and their corresponding definitions, as well as outlining participant feedback and final verification of each resource.

6.1.1 Identification of resources

A review of the work-family literature was conducted to identify resources and their corresponding definitions. The following databases were searched: Emerald, Proquest, Business Source Premier (EBSCOhost), Expanded Academic (Gale), ISI Web of Science, and Science Direct (Elsevier). Given that resources were being considered within a work-life fit paradigm, the work-life fit literature was reviewed in the first instance using the following key words: fit, work-life fit, work-family fit, work-home-community fit, resources, work resources, family resources, home resources, and community resources. However, given the limited nature of research in the work-life fit domain, the review was then extended to include resources in conjunction with work-life facilitation and enrichment, work-family facilitation and enrichment, work-family strategies, work-life interaction, work-family interaction, work-home interaction, and work-home-community interaction.

Through the review process, identified resources were recorded as were the corresponding definitions. In cases where two or more definitions were conflicting or inconsistent, the definition that had been most cited in the literature was recorded. In the instances where no definition was offered in the literature, a definition was developed. As the definitions were going to be used by workers during a later stage of the research, a conscious decision was made to use plain and simple language. This was particularly critical as the resource descriptions needed to be accessible to all workers irrespective of level of education and literacy ability. Furthermore, definitions were written in the second person such that they included the use of “you” and “your”. “You” language helps creates the sense that the writer is talking directly to the reader so that the reader feels engaged and involved (Nazario *et al.* 2010).

6.1.2 Verification of resources

Verification of resources occurred through consultation with workers engaged in the construction industry. Further information about participants is outlined below. An interview was conducted with each participant at their place of employment during

2010. Each interview took approximately 60 - 90 minutes and participant responses were manually recorded by the researcher (interviewer). The following process took place at each interview:

a) The definition of *work* was explained to the participant. It was important that each participant had a consistent understanding of the work domain in preparation for the next step, in which work resources were reviewed.

   Work is defined as paid employment (Bardoel et al. 2008; Eby et al. 2005). Work may include unpaid overtime, but does not include unpaid domestic and voluntary work (Pocock et al. 2009). Unpaid domestic work and voluntary work are included in the family and community domains.

b) The definition of *work resource* was explained to the participant.

   Work resources are the physical, psychological, organisational or social aspects of a person's work role that (a) reduce life demands and the associated physiological costs and psychological costs; (b) are functional in achieving life goals; and c) stimulate personal growth, learning, and development (adapted from Bakker et al. 2005).

c) The participant was asked to review each work resource label and corresponding definition for clarity of meaning. In cases where the meaning was deemed to be unclear, the participant was asked to suggest an alternate definition. The set of work resources provided to participants is outlined in section 6.2 of this Appendix.

d) The participant was asked to identify additional work resources which had not been included on the list provided by the researcher. Where an additional work resource was identified, the participant was asked to define this resource.

e) This process was replicated for family resources, and steps a) to d) were repeated. The set of family resources is outlined in section 6.3 of this Appendix.

   Family is defined as significant people and relationships in a person's private life. Based on this definition, family may extend beyond blood relatives and include close friends (adapted from Pocock et al. 2009).

   Family resources are the physical, psychological, organisational or social aspects of a person's family role that (a) reduce life demands and the associated physiological costs and psychological costs; (b) are functional in

achieving life goals; and c) stimulate personal growth, learning, and development (adapted from Bakker et al. 2005).

f) This process was replicated for community resources, and steps a) to d) were repeated. The set of community resources is outlined in section 6.4 of this Appendix.

Community is defined as relationships of support and/or interaction between people that might be based on place, shared interest or identity (adapted from Pocock et al. 2009).

Community resources are the physical, psychological, organisational or social aspects of a person's community role that (a) reduce life demands and the associated physiological costs and psychological costs; (b) are functional in achieving life goals; and c) stimulate personal growth, learning, and development (adapted from Bakker et al. 2005).

6.1.3 Participants

A panel of workers engaged in the Australian construction industry were invited to participate in an interview. The sampling strategy utilised sought to obtain representation from a wide range of subsets of the construction workforce based on gender, age, occupation, relationship status, parental status and living arrangements. Table 6a.1 outlines the demographic characteristics of participants.

Table 6a.1. Demographic characteristics of participants.

Participant	Gender	Age category	Occupation	Relationship status	Parental status	Living arrangement
1	Male	21 - 30	Graduate Project Engineer	Single	No children	Live with parents
2	Male	51 - 60	Senior Manager	Married	Children over 18	Live with wife and child with a disability
3	Female	31 - 40	Architect	Partner	No children	Live with partner
4	Female	41 - 50	Risk manager	Partner	Two children under 18	Live with partner and children
5	Male	31 - 40	Architect	Single	No children	Live alone
6	Male	51 - 60	Human Resources Manager	Married	Children over 18	Live with wife
7	Male	31 - 40	Human Resources Coordinator	Married	No children	Live with wife
8	Female	31 - 40	Quality and Safety Coordinator	Married	Two children under 18	Live with husband and children
9	Female	21 - 30	Health and Safety Coordinator (part time)	Partner	No children	Live with friends

6.2 WORK RESOURCES

This section describes the work resources and corresponding definitions identified through the literature review, outlines additional resources identified by participants, and describes participants' feedback on the resource definitions. Twenty seven work resources are outlined below, as identified by the identifier "WR".

6.2.1 Autonomy at work (WR01)

Source

Voydanoff (2007, p.75) identified autonomy as a work-based enabling resource, and defined it as "*the extent which employees are able to decide how to do their jobs*". Melchior *et al.* (2007, p.574) refer to a similar concept which they refer to as decision latitude, and define it as the "*control over the content and execution of work-related tasks*" (p.574). Demerouti, Bakker, Nachreiner and Schaufeli (2001) referred to job control as a work resource however not did provide a definition.

Definition

Drawing on Voydanoff's (2007) definition, autonomy at work was defined as: "*Freedom to decide what you do on the job and how the job gets done"*.

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.2 Skill utilization at work (WR02)

Source

Voydanoff (2007, p.75) identified skill utilization as a work-based enabling resource, and described it as jobs which enabled workers to learn new things, and use their skills and abilities.

Definition

Using Voydanoff's (2007) description as a basis, skill utilization at work was defined as: "*Use your skills and abilities at work*".

Participant verification of definition

The initial definition reviewed by participants was: "*Learn new things, and use your skills and abilities at work".* Upon review and development of the set of resources, the "*learn new things*" component of the definition intersected with the "work-related training and education" resource (WR03). On this basis, the definition was modified to ensure that resources were mutually exclusive.

6.2.3 Work-related training and education (WR03)

Source

Work-related training and education was not identified as a work-based resource in the work-family literature, and therefore was not initially included in the list of work demands, however was added at the suggestion of participants.

Definition

As this demand had not been identified in the literature, the following definition was developed in consultation with participants: "*Undertake work-related training and education during your paid work time".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.4 Income from work (WR04)

Source

Income generated from paid work has been identified as a resource in the work-life literature (DeBord, Canu and Kerpelman, 2000; Grzywacz, Almeida and McDonald, 2002; Clarke, Koch and Hill, 2004; Pocock, William and Skinner, 2009).

Definition

Drawing on the work-life literature, income from work was defined as: "*Money you earn from working*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.5 Meaning from your work (WR05)

Source

Hobfoll (1998, p.71) referred to "*feeling that my life has meaning/purpose*" as a resource, and Voydanoff (2004, 2007) identified meaning at work as a psychological based resource, however this resource has had minimal attention in the work-life literature.

Definition

Drawing on Voydanoff's (2007) description, the following definition was developed: "*Undertake work that is meaningful to you. You perceive your work to be significant and important*".

Participant verification of definition

The initial definition reviewed by participants was: "*Undertake work that is meaningful to you. You perceive your work to be significant and important, and its value to others is recognized".* Some participants suggested that there were two distinct concepts embedded within this definition. The first concept was the perception that work was significant and important, and the second concept was the perception that others believed the work to be valuable. Participants argued that the while they may perceive

their work to be significant and important, others may not. Based on this feedback, the definition was amended to exclude "*its value to others is recognized".*

6.2.6 Pride in your work (WR06)

Source

While Voydanoff (2005, 2007) identified pride from work as a psychological based resource, this resource has had minimal attention in the work-life literature.

Definition

Drawing on Voydanoff's (2007) description, the following definition was developed: "*Proud of your work participation and achievements".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.7 Flexible work hours (WR07)

Source

Flexible work hours is one of the most common resources outlined in the work-life literature. Within the demand-resource and work-life fit framework, flexible work hours is identified as a resource, while in the wider work-life domain it is often referred to as a strategy, an initiative or a policy which can support people's work-life interaction. Hill, Grzywacz, Allen, Blanchard, Matz-Costa, Shulkinc and Pitt-Catsouphes (2008, p.152) refer to workplace flexibility as "*the ability of workers to make choices that influence when, where and for how long they engage in work-related tasks*". Voydanoff (2007) refers to both traditional flextime in which workers are able to change their start and finish times within an agreed range of hours, and flexible work schedules in which workers are able to choose their start and finish time. Sand and Harper (2007, p.111) refer to flextime as the "*ability to provide workers with the flexibility to create their own work hours, specifically when they start and when they stop, allows workers to juggle the demands of work and life more effectively*".

Definition

Drawing on the work-literature, flexible work hours and flexible work schedules were differentiated to ensure that definitions were simple and concise, and that resources were mutually exclusive. Flexible work hours was defined as "*Choose your start and finish times".*

Participant verification of definition

The initial definition reviewed by participants was: "*Choose your start and finish times (within an agreed range of hours)*". This definition was based on traditional flextime in which workers are able to change their start and finish times within an agreed range of hours. Upon discussion with participants, it was agreed that this definition of flexibility was more relevant to other workforces, such as public sector workers. Participants suggested that the definition of flexibility would be more relevant to workers based in the construction industry if the non-traditional definition was used. Based on feedback the definition was modified, and upon subsequent review, no further amendments were suggested.

6.2.8 Flexible work schedule (WR08)

Source

In the work-life literature, the definition of flexible work schedules differs substantially. For example, Rogier and Padgett (2004) define flexible work schedules as the timing of work; Stavrou (2005) refers to flexible work schedules whereby the starting and finishing times are at different hours of the day, the week or a longer reference period; and Hayman (2009) refers to flexible work schedules as including flexitime, flexiplace and job sharing.

Definition

Drawing on Stavrou's (2005) description, flexible work schedule was defined as: "*Choose the days of the week in which your work is conducted*". Flexible work hours (WR07), flexiplace (WR10) and job sharing (WR16) are defined as distinct resources, so as to ensure that all resources are mutually exclusive.

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.9 Rostered day off (WR09)

Source

In the work-life literature, the impact of rostered days off (RDO) as a possible resource is limited. Lingard *et al*. (2010b) identified RDOs in the context of recovery opportunities and the subsequent impact on work-life interaction. Given that this research is focussing on the construction industry, and that both waged and some salaried workers receive RDOs, it was considered important to include RDOs as a resource.

Definition

Rostered day off was defined as: "*A day of leave allocated to you in lieu of accumulated time worked"*.

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.10 Work remotely (WR10)

Source

Along with "flexible work hours", telecommuting is one of the most common concepts reviewed in the work-life literature. Nilles (1998, p.1) refers to telecommuting as "*periodic work out of the principal office, one or more days per week either at home, a client's site, or in a telework center*". Sands and Harper (2007, p.112) refer to telecommuting as a benefit which "*allows employees to work at home or off-site*" through the utilisation of technology such as the internet. Thompson and Aspinwall (2009, p.201) defined telecommuting as "*the opportunity to complete work responsibilities from a remote location, such as home, during regularly scheduled work hours by communicating with the main office through the use of technology such as the internet*". Gajendran and Harrison (2007) identify the term "distributed work" which is an umbrella term that refers to arrangements that allow employees to complete their tasks across settings away from a central place of business or physical organizational location. According to Gajendran and Harrison (2007) the most well known form of distributed work is telecommuting, which is also known as telework or remote work. Hayman (2009) referred to flexiplace in the context of flexible work schedules. Flexiplace refers to a flexible place of work, in contrast to flexitime, which refers to flexible work hours.

Definition

Using Sands and Harper's (2007) description, work remotely was defined as: "*Able to work from a location other than your designated work location, such as home, a library or a café. Communication with work is via email or telephone rather than in person*".

Participant verification of definition

The initial label of the demand was "Telecommuting". Participant feedback suggested that the label should be more descriptive, and that waged workers would not initially

understand the term. It was suggested that the term be amended to “work remotely”, and other participants were in favour of the revised demand label.

The initial definition reviewed by participants was “*Able to work from a location other than your designated work location. For example, working from home*”. The definition was considered clear by participants, however it was suggested that “*email and telephone”* be added to the definition. The definition was subsequently updated and no further comments were received from participants.

6.2.11 Childcare benefits (WR11)

Source

Voydanoff (2007) referred to dependent care benefits provided by employers, and included both childcare and eldercare under this term. For the purpose of this exploratory research, childcare benefits and eldercare benefits are treated as distinct and separate resources. “Childcare benefits” is one of the work-life concepts most commonly reviewed in the work-life literature, however there is an inconsistent use of the term in the literature. For example, Thompson and Aspinwall (2009, p.201) define childcare benefits as “*on-site childcare; paid leave to care for sick children; financial assistance for childcare provisions; and after-school programs for school-age children at no charge*”. Dolcos and Daley (2009) refer to organization-based childcare resources and referral services, as does Voydanoff (2007). Rothbard, Phillips and Dumas (2005) refer to onsite childcare, while Secret (2005) refers to parenting in the workplace.

Definition

Some studies refer to childcare resources provided by employers, while other studies refer to childcare services external to workers’ place of employment. This definition focuses on childcare resources provided by the employer, while childcare services provided external to the employer are defined as a separate resource (refer to CR02 below). Drawing on the work-literature, childcare benefits was defined as: “*Access to onsite childcare, reimbursed childcare, referral to childcare through work, or the ability to bring children to work*”.

Participant verification of definition

Initially, the definition reviewed by participants was: “*Access to onsite childcare, reimbursed childcare, or referral to childcare through work”.* Some participants suggested that “*ability to bring children to work”* should be added to the definition. The definition was subsequently amended, and no further amendments were suggested by participants.

6.2.12 Eldercare benefits (WR12)

Source

Voydanoff (2007) referred to eldercare resource and referral services, however did not clearly define the term "eldercare resource". Thompson and Aspinwall (2009, p.201) defined eldercare benefits as "*a resource center available to provide information and assistance in choosing an eldercare provider from community providers; financial assistance for eldercare provisions; and paid leave to care for elderly (e.g. paid leave when it is necessary to take an elderly dependent to a doctor's appointment)".*

Definition

Drawing on the description outlined by Thompson and Aspinwall (2009), eldercare benefits was defined as: "*Referral to eldercare services through work for your elderly parents*". Taking leave to care for elderly was excluded from this definition, as it was part of the "time off for family" (WR13) resource.

Participant verification of definition

The initial definition reviewed by participants was: "*Access to referral to elder care through work*". Some participants suggested that this definition could be construed as referring to older workers rather than to worker's parents. Based on this feedback, the definition was amended and no subsequent changes were suggested.

6.2.13 Time off work for family (WR13)

Source

Voydanoff (2007) identified time off for family as a work-based family support, whereby workers are able to take time off during the workday to meet personal or family needs. Swanberg, Pitt-Catsouphes and Drescher-Burke (2005) refer to "occasional adjustment" as a form of flexibility which enables workers to take care of personal or family responsibilities.

Definition

Drawing on Voydanoff's (2007) description, time off for family was defined as: "*Able to take time off during the day for family reasons, such as picking up a sick child from school or taking an elderly parent to a medical appointment*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.14 Time off work for personal reasons (WR14)

Source

While some researchers have identified time off work for family as a work-based resource, time off for personal reasons has not been identified as a resource on its own. Rather, it has been intertwined with various forms of flexibility, such as occasional adjustment (Swanberg *et al.* 2005).

Definition

Time off for personal reasons was defined as: "*Able to take time off during the day for personal reasons, such as a dental appointment*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.15 Part time work (WR15)

Source

Voydanoff (2007) identified part time work as a work resource, and Bardoel, Morgan and Santos (2007, p.281) refer to part-time employment as "*work that takes place for less than a standard number of hours per week*". Similarly, van Rijswijk, Bekker, Rutte and Croon (2004) refer to part time work as working less than the standard number of weekly work hours.

Definition

Drawing on Bardoel *et al's* (2007) definition, part time work was defined as: "*Your agreed working hours are less than standard full-time hours*".

Participant verification of definition

The first definition reviewed by participants was: "*Working less than standard full-time hours*". Some participants suggested that "*working agreed hours*" be added to the definition so that it was clear that the arrangement had been formally agreed at the workplace. The definition was subsequently amended and no further suggestions for amendment were suggested.

6.2.16 Job share (WR16)

Source

Sands and Harper (2007, p.112) identify job sharing as a form of flexibility, in which "*an employer hires two or more people for one single job"*. Hayman (2009) also refers to part time work as a flexible work schedule.

Definition

Using Sands and Harper's (2007) definition, job share was defined as: "*Two or more employees are hired for one job*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.17 Compressed work week (WR17)

Source

Under a compressed work week arrangement, "*employees work approximately 40 hours in fewer than five days, most typically 40 hours in four days or less commonly, 38 hours in three days*" (Latack and Foster, 1985, p.75). Similarly, Thompson and Aspinwall (2009, p.201) operationalised a compressed work week as "*employees have the option of working four ten-hour days rather than five eight-hour days per week*".

Definition

Given that the resource definitions were prepared for a diverse workforce including waged and salaried workers, the decision was taken not to include the number of working hours in the definition as these vary according to occupation and work arrangement. As such, compressed work week was defined as: "*Work less days per week by working longer hours per day, with no change to your income*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.18 Supportive work-life culture (WR18)

Source

One of the most common definitions of work-life culture referred to in the work-life literature is outlined by Thompson, Beauvais and Lyness (1999). They define work-family culture as "*the shared assumptions, beliefs, and values regarding the extent to*

which an organization supports and values the integration of employees' work and family lives" (p.394). Voydanoff (2005, 2007) identified "supportive work-family culture" as a work-based support. A supportive work-life culture "*enhances employee flexibility in coordinating work and family responsibilities by legitimizing employee efforts to meet family needs and by creating a perception that career penalties are not associated with using available policies*" (Voydanoff, 2007, p.115). Similarly, Wayne, Randel and Stevens (2006, p. 449) identify "family-supportive culture" and describe it as "*general managerial support of family-related needs, does not penalize employees for devoting time to family, and has norms that are not excessive regarding the appropriate amount of time devoted to work*".

Definition

Drawing on the literature, supportive work-life culture was defined as: "*Support from your organization to meet your non-work demands. This may be through formal organizational policies and benefits*". "Non-work demands" was used rather than "family demands" to ensure that the definition was relevant to all workers irrespective of family structure.

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.19 Emotional support from supervisor (WR19)

Source

House (1981, p.24) identified four types of support which include emotional, instrumental, informational and appraisal. House (1981) described emotional support as providing empathy, caring, love and trust. Voydanoff (2007) identified workplace support as a work-based resource, and incorporated both supervisor support and co-worker support in the definition. In this research, supervisor support and co-worker support are treated as distinct resources, as are the various components of House's (1981) support typologies. Voydanoff (2009) further contends that supervisor support incorporates aspects of instrumental and emotional support. Other researchers have also identified these two components of support (for example, Aycan and Erkin, 2005; Hammer, Kossek, Yragui, Bodner and Hanson, 2009). Aycan and Eskin (2005, p.455) refer to emotional supervisory support as "*emphatic understanding and listening, sensitivity toward the work-family conflict issues, and genuine concern for the well-being of the employee and his or her family*". Hobfoll (1998) refers to "understanding

from my employer/boss" as a resource, however does not frame this within House's (1981) support typologies.

Definition

Using House's (1981) description as a basis, emotional support from supervisor was defined as: "*Concern, care, trust and empathy from your supervisor to help meet your demands*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.20 Emotional support from co-workers (WR20)

Source

Hobfoll (1998) identified "support from coworkers" as a resource, however did not differentiate between House's (1981) supports types. Voydanoff (2007) identified emotional support from co-workers as a work-based support, however this resource has otherwise received little attention in the work-life literature.

Definition

Using House's (1981) emotional support typology as a basis, emotional support from co-workers was defined as: "*Concern, care, trust and empathy from your co-workers to help meet your demands*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.21 Information support from supervisor (WR21)

Source

House (1981) identified informational support as a form of social support in which a person is provided with information, including advice, suggestions and directives that can be used to cope with personal and environmental problems. van Steenbergen, Ellemers, Haslam and Urlings (2008, p.353) described informational support as providing individuals with "*the opportunity to increase their understanding of an ongoing or upcoming situation, to compare their appraisals with those of others, and to assess the appropriateness of their emotional responses*". Within the work-life literature

however, the relevance of “information support from supervisor” as a work-based resource is largely unknown.

Definition

Using House’s (1981) description as a basis, information support from supervisor was defined as: “*Information, advice, suggestions, or directives from your supervisor which assists you to respond to demands*”.

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.22 Information support from co-workers (WR22)

Source

House (1981) identified informational support as a form of social support in which a person is provided with information, including advice, suggestions and directives that can be used to cope with personal and environmental problems. Informational support from co-workers as a possible resource for workers has received little attention in the work-life literature to date.

Definition

Using House’s (1981) description as a basis, information support from co-workers was defined as: “*Information, advice, suggestions, or directives from your co-workers which assist you to respond to demands*”.

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.23 Practical support from supervisor (WR23)

Source

House (1981) identified instrumental support as a form of social support in which direct help is provided to a person in need, and this may be in the form of aid in kind, money, labour or time. Instrumental supervisor support has been identified as a work-based resource in the work-life literature (for example: Aycan and Eskin, 2005; Frone, Yardley and Markel, 1997; Voydanoff, 2007). Frone, Yardley and Markel (1997, p.151) defined instrumental support as the “*provision of direct assistance or advice with the intent of*

helping an individual meet his or her responsibilities or direct needs", and distinguished between supervisor and co-worker support.

Definition

Using House's (1981) description as a basis, practical support from supervisor was defined as: "*Practical support from your supervisor to help you with your day-to-day activities. For example, your supervisor provides you with extra resources to help you get through your allocated tasks*".

Participant verification of definition

The resource was initially labelled "*instrumental support from supervisor"*. Some participants did not understand the term "*instrumental*" and suggested that plain English be used. It was suggested that "*instrumental*" be replaced by "*practical*", and this suggestion was well received by participants, therefore the label of the resource was amended.

The initial definition reviewed by participants was: "*Behavior and attitude of your supervisor intended to help you with your day-to-day work activities. For example, time, resources, practical help*". Some participants suggested that "*behavior and attitude*" be replaced with "*practical support*" so as to improve the clarity of the description. The definition was amended accordingly, and no further feedback was provided by participants.

6.2.24 Practical support from co-workers (WR24)

Source

House (1981) identified instrumental support as a form of social support in which direct help is provided to a person in need, and this may be in the form of aid in kind, money, labour or time. Co-worker instrumental support has been identified as a work-based resource in the work-life literature (Frone *et al*. 1997; Voydanoff, 2007).

Definition

Using House's (1981) description as a basis, practical support from co-workers was defined as: "*Practical support from your co-workers to help you with your day-to-day activities. For example, your co-workers help you to complete a task*".

Participant verification of definition

The resource was initially labelled "*instrumental support from co-workers"*. Some participants did not understand the term *"instrumental"* and suggested that plain

English be used. It was suggested that “instrumental” be replaced by “*practical”*, and this suggestion was well received by participants, therefore the label of the resource was amended.

The initial definition reviewed by participants was: “*Behavior and attitude of your co-workers intended to help you with your day-to-day work activities. For example, time, resources, practical help*”. Some participants suggested that “*behavior and attitude*” be replaced with “*practical support*” so as to improve the clarity of the description. The definition was amended accordingly, and no further feedback was provided by participants.

6.2.25 Employee assistance program (WR25)

Source

Organizational employee assistance programs (EAP) have been identified as a resource supporting workers’ health and wellbeing, however it is largely unknown how EAPs fit within a demand-resource framework in relation to work-life fit. Initially, EAP was not included in the list of work resources, however was added at the suggestion of participants.

Definition

The definition of EAP was developed in consultation with participants: “*A program offered by your employer which helps you to deal with personal problems. Services include short-term counseling and referral services”.*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.2.26 Appraisal support from supervisor (WR26)

Source

House (1981) identified appraisal support as a form of social support in which information is provided to a person in the form of feedback or appraisal which enables evaluation. However, supervisor appraisal support as a possible resource for workers has received minimal attention in the work-life literature.

Definition

Based on House’s (1981) description, appraisal support form supervisor was defined as: “*Feedback, evaluation, confirmation or affirmation received from your supervisor*”.

Participant verification of definition

House (1981, p.25) noted that "*appraisal and informational support are the most difficult to clearly define and distinguish from other forms of support*". This became evident as some participants struggled to understand the meaning of appraisal support, and many participants had difficulty in distinguishing between appraisal support and informational support as the differences are subtle. Based on feedback from participants, the decision was taken to exclude "*appraisal support from supervisor"* from the set of resources.

6.2.27 Appraisal support from co-workers (WR27)

Source

House (1981) identified appraisal support as a form of social support in which information is provided to a person in the form of feedback or appraisal which enables evaluation. The work-life literature however, has not identified co-worker appraisal support as a possible resource for workers.

Definition

Based on House's (1981) description, appraisal support form co-workers was defined as: "*Feedback, evaluation, confirmation or affirmation received from your co-workers*".

Participant verification of definition

Participants had difficulty in distinguishing between appraisal support and informational support, as the differences are subtle. Based on feedback from participants, the decision was taken to exclude "*appraisal support from co-workers"* from the set of resources.

6.3 FAMILY RESOURCES

This section describes the family resources and corresponding definitions identified through the literature review, outlines additional resources identified by participants, and describes participants feedback on the resource definitions. Thirty family resources are outlined below, as identified by the prefix "FR".

6.3.1 Family problem solving (FR01)

Source

Voydanoff (2007) identified family adaptability as a family resource, and defined it as the "*extent to which a family is able to alter its power structure, relationships, and rules in the face of challenges*" (p.78), and suggested that it facilitates effective problem solving within families. As family problem solving has received minimal attention in the work-life literature, it is not well understood how this resource sits within a work-life fit framework.

Definition

Using Voydanoff's (2007) description as a basis, family problem solving was defined as: "*Your family has effective problem solving capability to successfully deal with a challenging or unplanned event*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.2 Family cohesion (FR02)

Source

Voydanoff (2007) identified family cohesion as a family resource, and defined it as "*an affective component of family that reflects emotional bonding among family members*" (p.78). As family cohesion has received minimal attention in the work-life literature, it is not well understood how this resource sits within a work-life fit framework.

Definition

Using Voydanoff's (2007) description as a basis, family cohesion was defined as: "*The emotional bonding among your family members*".

Participant verification of definition

Upon review of the definition, one participant suggested that the definition be amended to include "*people you consider close family including blood relatives and close friends*". Other participants considered the proposed amendment but agreed that the initial definition was clear, and that participants would be advised in the context of this research that "family" was inclusive of close friends who were considered family.

6.3.3 Parental time-support for care of children (FR03)

Source

Voydanoff (2007) identified spouse support as a family resource which encompassed instrumental and emotional support, and which provided "*empathy, understanding, and practical assistance"* (p.78). Similarly, Aycan and Eskin (2005) identified two forms of spousal support (emotional and instrumental). Given that this research sought to identify and distinguish between resources, instrumental and emotional spouse support were defined separately ("partner emotional support" - FR06). Aycan and Eskin (2005, p.455) state that "*instrumental support is tangible help from the partner in household chores and childcare*". This is consistent with House's (1981) description of instrumental support, in which direct help is provided to a person in need, and this may be in the form of aid in kind, money, labour or time. As various resources are embedded within instrumental spouse support, these were identified separately, so as to explore them within a work-life fit framework.

Definition

Drawing on the work-life literature, parental time-support for care of children was defined as: "*The time allocated by the child's other parent in caring for your children. The other parent may or may not be your current partner*".

Participant verification of definition

The initial label of the resource was "partner support for childcare", and this was defined as: "*Support received from husband or wife / partner with caring for your children*". Participants suggested that "*husband or wife"* be deleted from the definition as partner was suffice. Other participants suggested that "*child support"* can have a legal interpretation and refers to financial support or time support in cases where a couple has divorced and care arrangements have been formalised through the family court. The challenge of this resource label and definition therefore, was to make it applicable to parents of children irrespective of partner relationship status. These suggestions were incorporated into the revised label and definition. Following the amendment, no further suggestions were received by participants.

6.3.4 Parental financial-support for care of children (FR04)

Source

Aycan and Eskin (2005, p.455) state that "*instrumental support is tangible help from the partner in household chores and childcare*". This is consistent with House's (1981) description of instrumental support, in which direct help is provided to a person in need, and this may be in the form of aid in kind, money, labour or time. Parental financial-support for care of children was not initially included in the set of family resources, and was identified by a participant as an additional resource.

Definition

The definition of parental financial-support for care of children was developed in consultation with participants: "*Financial assistance provided by the child's other parent in caring for your children. The other parent may or may not be your current partner*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.5 Partner support for eldercare (FR05)

Source

Voydanoff (2007) identified spouse and kin dependent care as a family resource, and described it as support received from a partner in caring for a family member requiring care. However, the impact of partner support for eldercare as a possible resource is not well understood.

Definition

The definition of partner support for eldercare was developed in consultation with participants: "*Help from your partner in caring for or assisting the elderly. The elderly may be aged parents or extended family members who require help or care with everyday living tasks*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.6 Partner emotional support (FR06)

Source

House (1981, p.24) described emotional support as providing empathy, caring, love and trust. Within the work-life literature, both Voydanoff (2007) and Aycan and Eskin (2005) identified spouse emotional support as a family-based resource. Aycan and Eskin (2005, p.455) described partner emotional support as "*emphatic understanding and listening, affirmation of affection, advice, and genuine concern for the welfare of the partner*".

Definition

Drawing on House's (1981) description, partner emotional support was defined as: "*Concern, care, trust and empathy from your partner to help you respond to your demands*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.7 Partner information support (FR07)

Source

House (1981) identified informational support as a form of social support in which a person is provided with information, including advice, suggestions and directives that can be used to cope with personal and environmental problems. van Steenbergen *et al*. (2008) described informational support as providing individuals with "*the opportunity to increase their understanding of an ongoing or upcoming situation, to compare their appraisals with those of others, and to assess the appropriateness of their emotional responses*" (p.353). Within the work-life literature however, the relevance of partner information support as a resource within a work-life fit framework is largely unknown.

Definition

Using House's (1981) description as a basis, partner information support was defined as: "*Information, advice or suggestions from your partner to help you respond to demands*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.8 Partner practical support (FR08)

Source

House (1981) identified instrumental support as a form of social support in which direct help is provided to a person in need, and this may be in the form of aid in kind, money, labour or time. Wayne, Randel and Stevens (2006) identified instrumental support and described it as "*behaviors and attitudes of family members aimed at assisting day-to-day household activities, such as relieving the employee of household tasks or otherwise accommodating the employee's work requirements*" (p.449).

Definition

Drawing on House (1981) and Wayne *et al's* (2006) description as a basis, partner practical support was defined as: "*Practical support from your partner to help you with your day-to-day activities. Support may be in the form time, money or resources*".

Participant verification of definition

The resource was initially labelled *partner instrumental support*. Some participants did not understand the term *"instrumental*" and suggested that plain English be used. It was suggested that *"instrumental"* be replaced by "*practical"*, and this suggestion was well received by participants, therefore the label of the resource was amended.

The initial definition reviewed by participants was: "*Behavior and attitude of your husband or wife / partner intended to help you with your day-to-day family activities. For example, time, money, practical help*". Some participants suggested that "*behavior and attitude*" be replaced with "*practical support"* so as to improve the clarity of the description. Other participants suggested that "*husband or wife*" be deleted from the definition, as 'partner' was suffice. The definition was amended accordingly, and no further feedback was provided by participants.

6.3.9 Relative support for childcare (FR09)

Source

While spouse support for childcare has been identified in the work-life literature as a resource, it is not known whether workers utilise relative support for care of dependent children, therefore this resource was included in order to explore workers support mechanisms.

Definition

In consultation with participants, the following definition for relative support for childcare was developed: "*Help from your extended family with caring for your children*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.10 Relative support for eldercare (FR10)

Source

While the work-life literature refers to the worker who has carer responsibilities for elderly parents (Cullen, Hammer, Neal and Sinclair, 2009; Keene, 2007), the impact of relative support for eldercare is not well understood as a possible resource.

Definition

The definition of relative support for eldercare was developed in consultation with participants: "*Help from your extended family in caring for or assisting the elderly. The elderly may be aged parents or extended family members who require help or care with everyday living tasks*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.11 Relative emotional support (FR11)

Source

House (1981, p.24) described emotional support as providing empathy, caring, love and trust. van Daalen, Willemsen, Sanders (2006) identified relative social support but did not differentiate between the various support components such as emotional or practical. Within the work-life literature, relative emotional support has received little attention as a possible resource.

Definition

Using House's (1981) description as a basis, relative emotional support was defined as: "*Concern, care, trust and empathy from your extended family to help you meet your demands*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.12 Relative information support (FR12)

Source

House (1981) identified informational support as a form of social support in which a person is provided with information, including advice, suggestions and directives that can be used to cope with personal and environmental problems. van Steenbergen *et al.* (2008) described informational support as providing individuals with "*the opportunity to increase their understanding of an ongoing or upcoming situation, to compare their appraisals with those of others, and to assess the appropriateness of their emotional responses*" (p.353). Within the work-life literature however, the relevance of "relative information support" as a resource within a work-life fit model is largely unknown.

Definition

Using House's (1981) description as a basis, relative information support was defined as: "*Information, advice or suggestions from your extended family to help you respond to your demands*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.13 Relative practical support (FR13)

Source

House (1981) identified instrumental support as a form of social support in which direct help is provided to a person in need, and this may be in the form of aid in kind, money, labour or time. Wayne *et al.* (2006) identified instrumental support and described it as "*behaviors and attitudes of family members aimed at assisting day-to-day household activities, such as relieving the employee of household tasks or otherwise accommodating the employee's work requirements*" (p.449).

Definition

Using House's (1981) and Wayne *et al's* (2006) description as a basis, relative practical support was defined as: "*Practical support from your extended family to help you with your day-to-day activities. Support may be in the form of time, money or resources*".

Participant verification of definition

The resource was initially labelled "*relative instrumental support"*. Some participants did not understand the term *"instrumental"* and suggested that plain English be used. It was suggested that "*instrumental*" be replaced by *"practical"*, and this suggestion was well received by participants, therefore the label of the resource was amended.

The initial definition reviewed by participants was: "*Behavior and attitude of your relatives / extended family intended to help you with your day-to-day family activities. For example, time, money, practical help"*. Some participants suggested that "*behavior and attitude"* be replaced with "*practical support"* so as to improve the clarity of the description. The definition was amended accordingly, and no further feedback was provided by participants.

6.3.14 Friend support for childcare (FR14)

Source

Within the work-life literature, friend support for childcare has been identified as a resource for working parents (for example, Baines and Gelder, 2003), however research is limited.

Definition

Friend support for childcare was defined as: "*Help from friends with caring for your children*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.15 Friend support for eldercare (FR15)

Source

Within the work-life literature, friend support for eldercare childcare as a resource for workers has received little attention as a possible resource.

Definition

Friend support for eldercare childcare was defined as: "*Help from your friends in caring for or assisting the elderly. The elderly may be aged parents or extended family members who require help or care with everyday living tasks*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.16 Friend emotional support (FR16)

Source

van Daalen *et al.* (2006) identified friend social support but did not differentiate between the various support components such as emotional and practical support.

Definition

Using House's (1981) description as a basis, friend emotional support was defined as: "*Concern, care, trust and empathy from friends to help meet your demands*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.17 Friend practical support (FR17)

Source

House (1981) identified instrumental support as a form of social support in which direct help is provided to a person in need, and this may be in the form of aid in kind, money, labour or time. Wayne *et al.* (2006) identified instrumental support and described it as "*behaviors and attitudes of family members aimed at assisting day-to-day household activities, such as relieving the employee of household tasks or otherwise accommodating the employee"s work requirements*" (p.449).

Definition

Using House's (1981) and Wayne *et al's* (2006) description as a basis, friend practical support was defined as: "*Practical support from your friends to help you with your day-to-day activities. Support may be in the form of time, money or resources*".

Participant verification of definition

The resource was initially labelled "*friend instrumental support"*. Some participants did not understand the term "*instrumental"* and suggested that plain English be used. It was suggested that "instrumental" be replaced by "*practical*", and this suggestion was well received by participants, therefore the label of the resource was amended.

The initial definition reviewed by participants was: "*Behavior and attitude of your friends intended to help you with your day-to-day family activities. For example, time, money, practical help"*. Some participants suggested that "*behavior and attitude"* be replaced with "*practical support"* so as to improve the clarity of the description. The definition was amended accordingly, and no further feedback was provided by participants.

6.3.18 In-house help with household work and chores (FR18)

Source

Wayne *et al.* (2006) identified instrumental support and described it as "*behaviors and attitudes of family members aimed at assisting day-to-day household activities, such as relieving the employee of household tasks or otherwise accommodating the employee's work requirements*" (p.449).

Definition

Drawing on Wayne *et al.* (2006) description, in-house help with household work and chores was defined as: "*Help from the people you live with to carry out household work and chores including washing, cleaning, paying bills, gardening, grocery shopping, preparing meals*".

Participant verification of definition

The initial label of the resource was "*partner help with household work and chores"*, defined as: "*Partner help with house hold work and chores including washing, cleaning, paying bills, gardening, grocery shopping, preparing meals"*. Participant feedback suggested that this definition was too narrow and was not applicable to workers living with their parents, or workers living with friends or house mates. Based on this feedback, the definition was amended to: "*Help from the adults you live with to carry out household work and chores including washing, cleaning, paying bills, gardening, grocery shopping, preparing meals"*. Upon review of the amended definition, some participants suggested that "*adults*" should be replaced with the term "*people*" based on the notion that children can also help with household work and chores. The definition was again amended, and no subsequent suggestions for revision were raised by participants. Along with the definition, the resource label was also amended to better reflect the scope of the definition.

6.3.19 Relative help with household work and chores (FR19)

Source

Relative help with household work and chores is a form of instrumental support, however it has not been specifically identified in the work-life literature as a resource.

Definition

Relative help with household work and chores was defined as: "*Help from your extended family with household work and chores including washing, cleaning, paying bills, gardening, grocery shopping, preparing meals*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.20 Partner employment (FR20)

Source

Voydanoff (2007, p.119) identified spouse employment as a resource originating from the family domain, in which "*husbands and wives may coordinate their work commitments in several ways in order to combine their work and family responsibilities more effectively*".

Definition

Using Voydanoff's (2007) definition as a basis, partner employment was defined as: "*Your partner's employment is arranged so that family demands (such as caring for children) can be met. This could mean that your partner works part time or has flexible work hours*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.21 Purchase household services (FR21)

Purchase household services was excluded from the set of resources as it was similar to another resource "purchased services such as house cleaning, gardening" (CR05).

6.3.22 Meaning from family (FR22)

Source

While Voydanoff (2004, 2007) identified meaning from family as a psychological based resource, this resource has had minimal attention in the work-life literature as a possible resource.

Definition

Drawing on Voydanoff's (2007) description, the following definition was developed: "*Your family situation is important and significant for you*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.23 Pride in family (FR23)

Source

While Voydanoff (2007) identified pride from family as a psychological based resource, this resource has received minimal attention in the work-life literature as a possible resource.

Definition

Drawing on Voydanoff's (2007) description, the following definition was developed: "*Pride in your family functioning and achievements".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.24 Time with pets (FR24)

Source

Time with pets has not been identified as a resource in the work-family literature, however, Pocock *et al*. (2009) identified dog walking as a community-based resource. Time with pets was not initially included in the list of resources, however was added at the suggestion of participants. Participants indicated that time spent with pets helped

them to cope with demands, such a stressful day at work, or stress experienced through daily commuting to and from work.

Definition

The following definition was developed by participants: "*The time you spend with your pet*."

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.25 Friend information support (FR25)

Source

House (1981) identified informational support as a form of social support in which a person is provided with information, including advice, suggestions and directives that can be used to cope with personal and environmental problems. van Steenbergen *et al.* (2008, p.353) described informational support as providing individuals with "*the opportunity to increase their understanding of an ongoing or upcoming situation, to compare their appraisals with those of others, and to assess the appropriateness of their emotional responses*" (p.449). Within the work-life literature however, the relevance of friend information support as a possible resource within a work-life fit model is largely unknown.

Definition

Using House's (1981) description as a basis, friend information support was defined as: *"Information, advice or suggestions from your friends which helps you to respond to your demands".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.26 Time for yourself (FR26)

Source

Hobfoll (1998) identified "free time" as a resource, however a definition was not outlined. Otherwise, "time for yourself" has had limited attention in the work-family literature, and therefore was not initially included in the list of resources. It was, however, added at the suggestion of participants. Participants indicated that time spent

alone helped them to cope with demands, such a stressful day at work, or stress experienced through daily commuting to and from work.

Definition

The following definition was developed by participants: "*You have time alone to relax and unwind".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.27 Time in physical activities and sports (FR27)

Source

Time in physical activities and sports was not identified as a resource in the work-family literature, and therefore was not initially included in the list of resources, however was added at the suggestion of participants. Participants indicated that time spent in physical activities and sports helped them to cope with demands, such a stressful day at work, or stress experienced through daily commuting to and from work. Time in physical activities and sports also related to participants' health and well being, which was considered as a critical resource in helping to meet demands.

Definition

The following definition was developed by participants: "*The time you spend in physical activities and sports. This may include group activities such as tennis, or individual activities such as cycling".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.3.28 Partner appraisal support (FR28)

Partner appraisal support was defined as*: "Feedback, evaluation, confirmation or affirmation received from your husband or wife / partner".* Participants struggled to understand the meaning of appraisal support, and many participants had difficulty in distinguishing between appraisal support and informational support as the differences are subtle. Based on feedback from participants, the decision was taken to exclude "appraisal support" from the set of resources.

6.3.29 Relative appraisal support (FR29)

Relative appraisal support was defined as: "*Feedback, evaluation, confirmation or affirmation received from relatives / extended family".* Participants struggled to understand the meaning of appraisal support, and many participants had difficulty in distinguishing between appraisal support and informational support as the differences are subtle. Based on feedback from participants, the decision was taken to exclude "appraisal support" from the set of resources.

6.3.30 Friend appraisal support (FR30)

Friend appraisal support was defined as: "*Feedback, evaluation, confirmation or affirmation received from your friends*". Participants struggled to understand the meaning of appraisal support, and many participants had difficulty in distinguishing between appraisal support and informational support as the differences are subtle. Based on feedback from participants, the decision was taken to exclude "appraisal support" from the set of resources.

6.4 COMMUNITY RESOURCES

This section describes the community resources and corresponding definitions identified through the literature review, outlines additional resources identified by participants, and describes participants" feedback on the resource definitions. Nineteen community resources are outlined below, as identified by the prefix "CR".

6.4.1 Flexibility when undertaking volunteering activity (CR01)

Source

Flexibility when undertaking volunteering activity was not identified as a resource in the work-family literature. This resource was added to the set of community-based resources based on the premise that, like flexibility at work, flexibility when undertaking volunteering can assist individuals to meet a range demands.

Definition

The following definition was developed: "*Discretion to choose when your volunteering activity can be done*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.2 Child care program (CR02)

Source

Access and availability of childcare is one of the most common resources referred to in the work-life literature, and has been identified by various researchers as an important resource for supporting working parents to meet their work responsibilities (for example; Burgess, Henderson and Strachan, 2007; Pocock *et al*. 2009; Poms, Botsford, Kaplan, Buffardi and O'Brien, 2009; Rosenzweig *et al*. 2008; Voydanoff, 2007).

Definition

Drawing on Voydanoff's (2007) description, child care program was defined as: "*Access to an organized child care program for your pre-school aged children. This does not include onsite childcare at work*".

Participant verification of definition

The initial definition reviewed by participants was: "*An organized child care program for pre-school aged children*". Participants suggested that there was some duplication with "childcare benefits" (WR11), and suggested that the definition be amended to state that onsite childcare was excluded from this resource. The definition was amended accordingly, and no further changes were suggested by participants.

6.4.3 Before and after school program (CR03)

Source

Voydanoff (2007) identified after-school programs as a distinct community-based resource, however after school programs have often been grouped with childcare programs in the work-life literature.

Definition

Using Voydanoff's (2007) description as a basis, before and after school program was defined as: "*Access to an organized program for your school-aged children to participate outside of the traditional school day. Some programs are run by a primary or secondary school and some by other organizations*".

Participant verification of definition

The label of the resource was initially "after school program", defined as: "*An organized program for school children to participate outside of the traditional school day. Some programs are run by a primary or secondary school and some by externally funded non-profit or commercial organizations*". Some participants advised that there are also before school programs and this should be reflected in both the resource label and description. Other participants suggested that the definition be simplified to state that the programs are run by "other organizations". These changes were made, and no further suggestions were received by participants.

6.4.4 School holiday program (CR04)

Source

In the work-life literature, little is known how school holiday programs assist parents in meeting their demands. To ensure that all resources were mutually exclusive, "school holiday program" was identified as a separate resource, as distinct from "child care program" (CR02), and "before and after school program" (CR03).

Definition

In consultation with participants, the following definition was developed: "*Access to an organized program for your school-aged children to participate during school holidays*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.5 Purchased services such as house cleaning, gardening (CR05)

Source

Purchased services for household management has been identified as a resource in the work-life literature (Pitt-Catsouphes, Matz-Costa and MacDermid, 2007).

Definition

Drawing on Pitt-Catsouphes *et al's* (2007) description, the resource was defined as: "*Purchase services such as house cleaning, gardening and ironing*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.6 Health, welfare and community services (CR06)

Source

Health, welfare and community services has received little attention as a community-based resource for workers in the work-life literature.

Definition

The following definition was developed: "*Access to formal health, welfare and community service agencies which provide professional care for you or the people you care for*".

Participant verification of definition

One participant indicated that this definition covered off services provided by local council (local government). All participants perceived that this definition was clear and that no changes were required.

6.4.7 Training and education facilities (CR07)

Source

Pocock *et al.* (2009) identified limited local education as a demand, however access to training and education facilities as a community-based resource has received little attention in the work-life literature.

Definition

The following definition was developed: *"Access to formal training and education facilities, such as TAFE and university, which offer training courses, certificates and degrees*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.8 Self-interest courses (CR08)

Source

Self-interest courses was not identified in the work-life literature as a resource, and therefore was not initially included in the set on resources. It was included however, at the suggestion of participants.

Definition

The definition of self-interest courses was developed in consultation with participants: "*Courses provided by organizations which offer services such as cooking classes, language classes, photography courses*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.9 Religious group emotional support (CR09)

Source

Support provided by religious groups has received some attention, albeit limited, in the work-life literature. Hobfoll (1998, p.71) identified "*involvement with church, synagogue*" as a resource. Voydanoff (2007) identified churches as a place where individuals can seek out formal community support, however did not differentiate between the various types of support such as emotional and practical.

Definition

Drawing on House's (1981) emotional support typology, the resource was defined as: "*Concern, care, trust and empathy from your religious group to help meet your demands*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.10 Religious group information support (CR10)

Source

Support provided by religious groups has received some attention, albeit limited, in the work-life literature. Hobfoll (1998, p.71) identified "*involvement with church, synagogue*" as a resource. Voydanoff (2007) identified churches as a place where individuals can seek out formal community support, however did not differentiate between the various types of support as outlined by House (1981).

Definition

Drawing on House's (1981) informational support typology, religious group information support was defined as: "*Information, advice or suggestions from your religious group which assists you to respond to demands*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.11 Religious group practical support (CR11)

Source

Support provided by religious groups has received some attention, albeit limited, in the work-life literature. Hobfoll (1998, p.71) identified "*involvement with church, synagogue*" as a resource. Voydanoff (2007) identified churches as a place where individuals can seek out formal community support, however did not differentiate between the various types of support as outlined by House (1981).

Definition

Drawing on House's (1981) instrumental support typology, religious group practical support was defined as: "*Practical support from your religious group to help you with your day-to-day activities. Support may be in the form of time, money or, resources*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.12 Public transport (CR12)

Source

Access to public transport has been identified in the work-life literature as a resource originating from the community (DeBord *et al*. 2000; Gareis and Barnett, 2008; Pocock *et al.* 2009).

Definition

Public transport was defined as: "*Access to public transport, such as buses, trains and trams*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.13 Community transport (CR13)

Source

Community transport was not identified in the work-life literature as a resource, and therefore was not initially included in the set on resources. It was included, however, at the suggestion of participants.

Definition

Participants developed the following definition for community transport: "*Access to community transport, such as a walking school bus, free-of-charge community bus*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.14 Meaning from community (CR14)

Source

While Voydanoff (2007) identified meaning from community as a psychological based resource, this resource has had minimal attention in the work-life literature as a possible resource.

Definition

Drawing on Voydanoff's (2007) description, meaning from community was defined as: "*Participation in community activities is important and significant for you*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.15 Pride in community (CR15)

Source

While Voydanoff (2007) identified pride from community as a psychological based resource, this resource has had minimal attention in the work-life literature as a possible resource.

Definition

Using Voydanoff's (2007) description as a basis, pride in community was defined as: "*Pride in your community activities and achievements*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.16 Community group emotional support (CR16)

Source

Community group emotional support was not initially in the set of resources, however was included at the suggestion of participants.

Definition

Using House's (1981) emotional support typology as a basis, community group emotional support was defined as: "*Concern, care, trust and empathy from a community group in which you are a member helps you to meet your demands. For example your local football club, mothers group*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.17 Community group information support (CR17)

Source

Community group information support was not initially in the set of resources, however was included as the suggestion of participants.

Definition

Using House's (1981) informational support typology as a basis, community group information support was defined as: "*Information, advice or suggestions from a community group in which you are a member. This support assists you to respond to demands. For example your local football club, mothers group*".

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.18 Community group practical support (CR18)

Source

Community group support was not initially in the set of resources, however was included as the suggestion of participants.

Definition

Using House's (1981) instrumental support typology as a basis, community group practical support was defined as: "*Practical support to help you with your day-to-day activities from a community group in which you are a member. Support may be in the form of time, money or resources. For example your local football club, mothers group".*

Participant verification of definition

All participants perceived that this definition was clear and that no changes were required.

6.4.19 Religious institution appraisal support

Religious institution appraisal support was defined as: "*Feedback, evaluation, confirmation or affirmation received from Religious groups*". Participants struggled to understand the meaning of appraisal support, and many participants had difficulty in distinguishing between appraisal support and informational support as the differences are subtle. Based on feedback from participants, the decision was taken to exclude "appraisal support" from the set of resources.

6.5 SUMMARY

Appendix 6a outlined the source of resources, and specified whether they had been identified through the literature or at the suggestion of participants. Participant feedback of each resource was outlined. The output of the verification process was the set resources which would be used as part of the resources instrument.

Appendix 7a

Questionnaire

ID:

The following questions form part of a research that aims to *develop a tool-kit to support workers' positive work-life experience.*

☑ Please choose the answer that most closely corresponds to your current experiences and preferences.

There are no right or wrong answers.

The questions will take approximately 15 minutes to answer.

Please note that:

- **Family** can be your spouse/partner, children, parents, siblings and/or significant others in your life;
- **Work** refers to activities you undertake in return for payment; and
- **Community** refers to the relationships of support and interaction you have with people based on place, shared interest or identity.

Thank you,

Michelle Turner
PhD Candidate,
RMIT University.

Some information about you

1. **What is your age?** _____

2. **What is your gender?** Male☐ Female☐

3. **Who do you live with?** (please circle your answer)

Live alone	Live with my partner	Live with my partner and children	Live with my children (single parent)	Live with my parents	Live with friends or house mates

4. **Is your partner currently in paid employment?**

Do not have a partner	Partner does not work	Partner in part time employment	Partner in full time employment

Some information about your work

5. **What is your current work role? (title)**_____

6. **What type of pay do you usually receive?**

Salary: same pay each week irrespective of the hours you work beyond your standard hours.	**Wage:** paid for standard hours plus additional hours worked above your standard hours.

7. **Where do you spend most of your time at work?**

Onsite – in direct construction activity	Onsite – but mainly in the site office	Head office or Regional office	Other (please indicate)

8. **On average, how many hours do you work each week? Include time spent at your work location and at home on work-related tasks.** _____ hours

9. **On average, how many hours do you spend travelling to and from work each week?** ____ hours

Some information about your household duties

10. **On average, how many hours a week do you spend undertaking household chores, such as buying groceries, tidying, cleaning, cooking, washing clothes, paying bills, carrying out repairs?** _____ hours

11. **How much help do you receive with household chores? Chores may include buying groceries, tidying, cleaning, cooking, washing clothes, paying bills, carrying out repairs.**

I receive no help at all	I almost never receive help	I seldom receive help	I sometimes receive help	I frequently receive help	I receive help almost all the time	I receive help all the time

Some information about your care responsibilities

12. **How many children do you have that are less than 18 years of age?**

No children	1 child	2 children	3 children	4 children	More than 4 children

13. How many children do you have that are 18 years of age or older?

No children	1 child	2 children	3 children	4 children	More than 4 children

14. Do you receive help with childcare duties? Consider family, friends, purchased help.

I do not have children	I receive no help at all	I almost never receive help	I seldom receive help	I sometimes receive help	I frequently receive help	I receive help almost all the time	I receive help all the time

15. How much help do you receive with childcare duties? Consider family, friends, purchased help.

I do not have children	I receive no help	I receive 1–5 hours of help per week	I receive 6–10 hours of help per week	I receive 11–20 hours of help per week	I receive 21–30 hours of help per week	I receive 31-40 hours of help per week	I receive more than 40 hours of help per week

16. Do any of your children have special needs due to a disability? Special needs may arise from emotional, intellectual or physical factors.

I do not have children	My child has no special needs	My child has a low level of special needs	My child has a medium level of special needs	My child has a high level of special needs

17. Do you have care duties for elderly or ailing parents or relatives?

I do not have elderly or ailing parents or relatives	I have no care duties	I have a low level of care duties	I have a medium level of care duties	I have a high level of care duties

18. Do you receive help with parent or relative care duties? Consider family, friends, purchased help.

I do not have elderly or ailing parents or relatives	I receive no help at all	I almost never receive help	I seldom receive help	I sometimes receive help	I frequently receive help	I receive help almost all the time	I receive help all the time

19. How much help do you receive with parent or relative care duties? Consider family, friends, purchased help.

I do not have elderly or ailing parents or relatives	I receive no help	I receive 1–5 hours of help per week	I receive 6–10 hours of help per week	I receive 11–20 hours of help per week	I receive 21–30 hours of help per week	I receive 31-40 hours of help per week	I receive more than 40 hours of help per week

20. Considering everything, how much responsibility for other people (outside of the workplace) do you have?

I have little or no responsibility for other people	I have a below-average amount of responsibility for other people	I have an average-amount of responsibility for other people	I have an above-average amount of responsibility for other people	I have an exceptional amount of responsibility for other people

Some information about your work-family-community interaction

		Strongly disagree	Disagree	Mostly disagree	Neither agree nor disagree	Mostly agree	Agree	Strongly agree
21.	I don't like to have to think about work while I'm at home.	1	2	3	4	5	6	7
22.	I prefer to keep work life at work.	1	2	3	4	5	6	7
23.	I don't like work issues creeping into my home life.	1	2	3	4	5	6	7
24.	I like to be able to leave work behind when I go home.	1	2	3	4	5	6	7
25.	A major source of satisfaction in my life is my family.	1	2	3	4	5	6	7
26.	Most of the important things that happen to me involve my family.	1	2	3	4	5	6	7
27.	I am very much involved personally in my family.	1	2	3	4	5	6	7
28.	Most of my interests are centered around my family.	1	2	3	4	5	6	7
29.	A major source of satisfaction in my life is my work.	1	2	3	4	5	6	7
30.	Most of the important things that happen to me involve my work.	1	2	3	4	5	6	7
31.	I am very much involved personally in my work.	1	2	3	4	5	6	7
32.	Most of my interests are centered around my work.	1	2	3	4	5	6	7
33.	A major source of satisfaction in my life is my community.	1	2	3	4	5	6	7
34.	Most of the important things that happen to me involve my community.	1	2	3	4	5	6	7
35.	I am very much involved personally in my community.	1	2	3	4	5	6	7
36.	Most of my interests are centered around my community.	1	2	3	4	5	6	7

37. Please distribute 100 points to your family life, work life, and community life according to how important each one is to you currently:

Family _____points
Work _____points
Community _____points
Total 100 points

38. Please distribute 100 points to your family life, work life, and community life according to how you currently divide your time:

Family _____points
Work _____points
Community _____points
Total 100 points

Other issues impacting your work-life interaction

39. Please add your comments:

Thank you for participating.

Appendix 8a

Project information statement

[printed on RMIT letterhead]

Project information statement

My name is Michelle Turner and I am studying towards a Doctor of Philosophy (Ph.D.) at RMIT University. The title of my research is *'The development and testing of a work-life fit model: A demands and resources approach'*. The research is being supervised by Professor Helen Lingard in the School of Property, Construction and Project Management, RMIT University.

The research will investigate the work, family and community demands and resources of employees working in the construction industry. To date, little is known about how employees experience these demands and resources, and how these profiles impact upon work-life interaction. It is anticipated that an understanding of 'demand-resource' profiles of employees will assist organisations to develop policies and practices which support a wide range of employees to attain work-life fit. Furthermore, an understanding of 'demand-resource' profiles will help individuals to evaluate their own fit. Such an understanding may enable individuals to reconfigure their demand-resource profile is cases where mis-fit is perceived.

Approximately 60 individuals will participate in the project, with representation from office and site-based workers, males and females, and workers with and without children.

At this stage of the research, I am asking you to:

- complete a brief survey which asks questions about your family/home life, work situation and your work-family-community interaction;
- undertake a sorting exercise to rank the current demands in your life (such as work, care for young children);
- undertake a sorting exercise of resources (such as supervisor support, childcare facilities); and
- participate in a brief discussion with the researcher to provide feedback on the demands and resources you have sorted, as well as provide you with an opportunity to raise any additional issues.

You are encouraged to freely express your opinions and ideas about how you experience demands and resources and their impact on your work-life interaction. The procedures are designed to protect your anonymity and the confidentiality of your comments to the fullest possible extent, within the limits of the law. No information that could identify an individual participant will be presented in any reports or publications arising from the research.

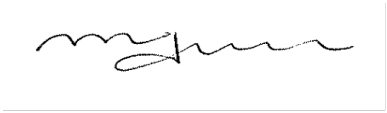
The data you provide will be used to identify demand-resource profiles for various work groups, such as office workers, construction workers, and workers with and without children. The research findings will be communicated publicly through a variety of sources, including conference papers and academic publications. In addition, participating organizations' will receive a report outlining research findings and practical implications. A copy of the findings will be available to you upon request.

The anonymous data you provide will be kept securely at RMIT University for five years from the date of publication, before being destroyed. Only the researcher will have access to this data.

Please be advised that your participation in this interview is completely **voluntary**. Should you wish to withdraw at any stage, or to withdraw any unprocessed data you have supplied, you are free to do so without prejudice.

Any complaints about your participation in this project may be directed to the Executive Officer, RMIT Human Research Ethics Committee, Research & Innovation, RMIT, GPO Box 2476, Melbourne, 3001. Details of the complaints procedure are available from: 'Complaints with respect to participation in research at RMIT' page

Should you require any further information, or have any concerns, please do not hesitate to contact the researchers (contacts provided below).

Michelle Turner Master of Project Management Graduate Diploma of Applied Psychology Bachelor of Arts	Professor Helen Lingard Doctor of Philosophy Bachelor of Arts (Honours)
RMIT University	RMIT University
0419 512 630	(03) 9925 3449
michelle.turner@student.rmit.edu.au	helen.lingard@rmit.edu.au
	
12 November 2010	12 November 2010

Appendix 8b

Consent Form

Consent Form
Card sort and discussion

COLLEGE OF	Design and Social Context		
SCHOOL OF	Property, Construction and Project Management		
Name of participant:	(please print)		
Project Title:	The development and testing of a work-life fit model: a demands and resources approach		
Name(s) of investigators: (1)	Michelle Turner	Phone:	0419 512 630
(2)	Helen Lingard	Phone:	(03) 9925 3449

1. I have received a statement explaining the card sorting exercise and the discussion involved in this project.
2. I consent to participate in the above project, the particulars of which - including details of the card sorting exercise and the discussion - have been explained to me.
3. I authorise the investigator or his or her assistant to interview me.
4. I give my permission for the discussion to be audio taped.
5. I acknowledge that:

   a) Having read the Project Information Statement, I agree to the general purpose, methods and demands of the study.

   b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.

   c) The project is for the purpose of research. It may not be of direct benefit to me. The privacy of the personal information I provide will be safeguarded and only disclosed where I have consented to the disclosure or as required by law.

   d) The security of the research data is assured during and after completion of the study. The data collected during the study may be published.

Participant's Consent

Name: _____ Date: _____
(Participant signature)

Name: _____ Date: _____
(Witness signature)

Any complaints about your participation in this project may be directed to the Executive Officer, RMIT Human Research Ethics Committee, Research & Innovation, RMIT, GPO Box 2476, Melbourne, 3001. Details of the complaints procedure are available from: 'Complaints with respect to participation in research at RMIT' page.

Appendix 8c

Demands recording matrix

Date: _____

Participant code: _____

DEMAND	No.	1	2	3	4	5	6	7	No.
Time in paid work	WD1								WD1
Commuting time	WD2								WD2
Non-standard work schedule	WD3								WD3
Work over-load	WD4								WD4
Over time hours	WD5								WD5
Job insecurity	WD6								WD6
Overnight travel for work	WD7								WD7
Work activities at home	WD8								WD8
Emotional strain at work	WD9								WD9
Physical strain at work	WD10								WD10
Mental strain at work	WD11								WD11
Industry expectations	WD12								WD12
Organizational expectations	WD13								WD13
Supervisor expectations	WD14								WD14
Co-worker expectations	WD15								WD15
Interpersonal conflict at work	WD16								WD16
Project characteristics	WD17								WD17
Undertaking training and education for work	WD18								WD18
Time caring for your children	FD1								FD1
Time caring for your relatives children	FD2								FD2
Time caring for your friends children	FD3								FD3
Time caring for relatives	FD4								FD4
Time caring for pets	FD5								FD5
Time in household tasks	FD6								FD6
Household relationship conflict	FD7								FD7
Child with a disability	FD8								FD8
Unfairness in household work	FD9								FD9
Family activities at work	FD11								FD11
Health and fitness activities	FD12								FD12
Undertaking formal training and education	FD13								FD13
Participating in self-interest activities	FD14								FD14
Time supporting your childrens activities	FD15								FD15
Time supporting your grandchildrens activities	FD16								FD16
Time in social activities	FD17								FD17
Time allocated to volunteering	CD1								CD1
Emotional strain in volunteering	CD2								CD2
Time in religious and faith activities	CD3								CD3
Hours and schedule of health, welfare and com	CD4								CD4
Hours and schedule of schools	CD5								CD5
Limited or no access to public transport	CD6								CD6
Hours and schedule of self-interest courses an	CD7								CD7
Hours and schedule of training and education	CD8								CD8
Undertaking parent-based pre-school or schoo	CD9								CD9

Appendix 8d

Resources recording matrix

Date: _____

Participant code: _____

RESOURCE	No.	IMPORTANT	NOT IMPORTANT
Autonomy at work	WR1		
Skill utilization at work	WR2		
Work-related training and education	WR3		
Income from work	WR4		
Meaning from your work	WR5		
Pride in your work	WR6		
Flexible work hours	WR7		
Flexible work schedule	WR8		
Rostered day off	WR9		
Work remotely	WR10		
Childcare benefits	WR11		
Eldercare benefits	WR12		
Time off work for family	WR13		
Time off work for personal reasons	WR14		
Part time work	WR15		
Job share	WR16		
Compressed work week	WR17		
Supportive work-life culture	WR18		
Emotional support from supervisor	WR19		
Emotional support from co-workers	WR20		
Information support from supervisor	WR21		
Information support from co-workers	WR22		
Practical support from supervisor	WR23		
Practical support from co-workers	WR24		
Employee assistance program	WR25		
Family problem solving	FR1		
Family cohesion	FR2		
Parental time-support for care of children	FR3		
Parental financial-support for care of children	FR4		
Partner support for eldercare	FR5		
Partner emotional support	FR6		
Partner information support	FR7		
Partner practical support	FR8		
Relative support for childcare	FR9		
Relative support for eldercare	FR10		
Relative emotional support	FR11		
Relative information support	FR12		
Relative practical support	FR13		
Friend support for childcare	FR14		
Friend support for eldercare	FR15		

RESOURCE	No.	IMPORTANT	NOT IMPORTANT
Friend emotional support	FR16		
Friend practical support	FR17		
In-house help with household work and chores	FR18		
Relative help with household work and chores	FR19		
Partner employment	FR20		
Meaning from family	FR22		
Pride in family	FR23		
Time with pets	FR24		
Friend information support	FR25		
Time for yourself	FR26		
Time in physical activities and sports	FR27		
Flexibility when undertaking volunteering activity	CR1		
Child care program	CR2		
Before and after school program	CR3		
School holiday program	CR4		
Purchased services such as house cleaning, gardening.	CR5		
Health, welfare and community services	CR6		
Training and education facilities	CR7		
Self-interest courses	CR8		
Religious group emotional support	CR9		
Religious group information support	CR10		
Religious group practical support	CR11		
Public transport	CR12		
Community transport	CR13		
Meaning from community	CR14		
Pride in community	CR15		
Community group emotional support	CR16		
Community group information support	CR17		
Community group practical support	CR18		

Appendix 8e

Q analysis procedure

Q analysis procedure

The Q analysis procedure is comprehensively detailed in numerous documents (for example, Brown, 1980, 1993; Donner, 2001; McKeown and Thomas, 1988; Schmolck, 2002; Stenner, Watts and Worrell, 2008; Stephenson, 1953; van Excel and de Graaf, 2005; Watts and Stenner, 2005, 2012). Therefore, rather than provide a comprehensive overview of the analysis procedure, an overview is outlined, together with the steps taken in the research.

8.1 Factor analysis

Factor analysis is a statistical technique that simplifies complicated data into overarching patterns. By reducing a larger number of variables into a smaller number of 'factors', it uncovers the latent structure of a dataset. In Q factor analysis, correlations between persons as opposed to variables are factored. Q factor analysis determines whether a set of people group together rather than a set of variables (Brown, 1980).

8.2 Extraction of the initial factors

Three procedures took place during the extraction of the initial factors. Firstly, correlations between participants' sorts were derived. Secondly, the initial factors were extracted. And thirdly, these factors were rotated to arrive at a clear representation of distinct patterns of experience of demands (Brown, 1980; Donner, 2001; Watts and Stenner, 2012). The first two procedures were automatic, and were a by-product of the principal components analysis (PCA). The output of PCA provided the basis for the evaluation step (factor rotation) which followed. PQMethod calculated an eigenvalue for each of the initial factors, which guided the number of factors which were subsequently rotated. Eigenvalues are a measure of the relative contribution of a factor to the explanation of the total variance in the correlation matrix (Tabachnick and Fidell, 2007). The maximum number of factors carried into the rotation step is equal to the number of initial factors with eigenvalues greater than one.

8.3 Factor rotation

As outlined in the previous section, PCA yields eigenvalues for each initial factor extracted. The maximum number of factors that were analysed using varimax rotation was based on all factors with an eigenvalue greater than one. In this 'investigative' phase of analysis, factor rotation was run more than once, starting with the smallest number of factors, and ending at the maximum number of factors (based on the eigenvalues greater than one). Using eigenvalues as a starting point, the final number of factors which were rotated was guided by the number of factors which yielded the

least number of confounding sorts (sorts which load significantly on two or more factors), the least number of participants who did not load onto any factor, and maximising the number of highly significant loadings on each factor (Watts and Stenner, 2005).

Each factor rotation output indicates the strength of the participant's "loading" onto the factor. Factor loadings indicate to what extent each participant 'loads' onto the factor. Statistically significant factor loadings at $p<0.01$ were calculated by using the equation that is ordinarily applied to Q studies: *standard error (SE) = (1/√N).* In this calculation, N equals the number of statements used in the study (Brown, 1980; McKeown and Thomas, 1988; Watts and Stenner, 2005, Watts and Stenner, 2012), and SE (standard error) at $p<0.01$ is calculated by using 2.58. In this study, factor loadings of ±0.39 were significant at $p<0.01$ [2.58(1√43)=0.39]. The more a participant loads cleanly onto a single factor, the better that factor represents that participant's sort, and subjective experience of demands. A Q Methodological factor must have at least two Q sorts that load on it significantly (Dzipoa and Ahern, 2011; Watts and Stenner, 2005). These Q sorts must not be confounding, nor should the participants load onto more than one factor (McKeown and Thomas, 1988). The rotation which yielded the least number of confounding sorts, the least number of participants who did not load onto any factor, and maximised the number of highly significant loadings on each factor was a four factor solution, which explained 67% of the variance. Results of the analysis are outlined in Chapter 9.

8.4 Assigning participants to factors (groups)

Following factor rotation in which a number of possible solutions were investigated and the optimal solution identified, the final phase of the rotation sequence was to assign participants to factors. This is the step at which the factor groups are created. Following a final review of participant loadings, participants were assigned to factors and PQMethod generated the results of the chosen solution. Of the 59 participants, nine participants loaded onto more than one factor in the four factor solution, therefore were excluded from further analysis. The 50 remaining participants were assigned to factor groups. Results of the analysis are outlined in Chapter 9.

Interpretation of the results is based on this output, which outlines characteristics of each factor including the ranking of demands for each factor group, and a model Q sort for each factor. A model Q sort specifies how participants of that factor ranked each demand along the continuum from (1) not extent at all to (7) a very large extent.

8.5 Factor interpretation

Watts and Stenner (2005, p.82) contend that "*the interpretive task in Q methodology involves the production of a series of summarizing accounts, each of which explicates the view point being expressed by that particular factor*". Interpretation of each factor proceeds according to analysis of the ranking of demands for each of the factor groups, as well as a review of the model Q sort for each factor group. The qualitative comments gathered from participants who loaded significantly on the factor being interpreted were also used to aid interpretation. Review of the qualitative data is particularly important as "*each statement may mean something different to everyone, and something different to the same person in different circumstances…statements in concourse shift in their meanings with their company – they may have different meanings in different factor*s" (Stephenson, 1983, pp.75, 82). For example, it may the case that two factor groups have given the same demand a high ranking, but that the meaning and context attributed to that demand may differ and this can be extrapolated through participant's qualitative data.

Following a review of the: (1) demand rankings; (2) the model Q sort for each group; and (3) the qualitative data, themes were identified which revealed the experience of demands for each emergent group. Data obtained from the questionnaire, such as demographics and role salience measures, was also used as a means by which to interpret participant's experience of demands.

Appendix 9a

Ranking of demands for group one

Ranking of demands for group one			
Rank	**Z Score**	**Demand ID**	**Demand**
7	2.36	WD1	time in paid work
7	2.20	WD12	industry expectation
7	1.57	WD5	overtime hours
7	1.57	WD13	organizational expectations
7	1.56	WD14	supervisor expectations
7	1.48	WD4	work over load
6	1.37	WD11	mental strain at work
6	1.34	WD15	co-worker expectations
6	1.16	WD17	project characteristics
6	0.74	WD3	non standard work schedule
6	0.71	WD9	emotional strain at work
6	0.65	FD16	time in social activities
5	0.42	WD16	interpersonal conflict at work
5	0.36	FD6	time in household tasks
5	0.3	WD2	commuting time
5	0.25	FD11	health and fitness activities
5	-0.07	WD8	work activities at home
5	-0.11	CD7	hours and schedule of self interest courses and groups
4	-0.15	FD7	household relationship conflict
4	-0.16	WD18	undertake training and education for work
4	-0.31	FD10	family activities at work
4	-0.38	WD10	physical strain at work
4	-0.41	FD1	time caring for your children
4	-0.42	WD6	job insecurity
4	-0.5	FD4	time caring for relatives
3	-0.51	FD13	participating in self-interest activities
3	-0.61	CD1	time allocated to volunteering
3	-0.63	FD9	unfairness in household work
3	-0.68	FD5	time caring for pets
3	-0.76	FD14	time supporting your children’s activities
3	-0.78	WD7	overnight travel for work
2	-0.82	FD12	undertake formal training and education
2	-0.87	CD2	emotional strain in volunteering
2	-0.88	CD4	hours and schedule of health, welfare and community organizations
2	-0.91	CD8	hours and schedule of training and education orgs
2	-0.91	CD5	hours and schedule of schools
2	-0.96	FD2	time caring for your relatives children
1	-0.97	CD9	undertaking parent-based pre-school and school related activities
1	-1.01	CD3	time in religious and faith activities
1	-1.02	FD3	time caring for your friends children
1	-1.04	FD8	child with a disability
1	-1.07	CD6	limited or no access to public transport
1	-1.09	FD15	time supporting your grandchildren’s activities

Appendix 9b

Ranking of demands for group two

Ranking of demands for group two			
Rank	**Z Score**	**Demand ID**	**Demand**
7	2.334	WD1	time in paid work
7	1.981	FD16	time in social activities
7	1.755	FD1	time caring for your children
7	1.669	WD2	commuting time
7	1.666	FD11	health and fitness activities
7	1.506	FD14	time supporting your children's activities
6	1.313	WD3	non standard work schedule
6	1.125	FD4	time caring for relatives
6	0.901	WD18	undertake training and education for work
6	0.794	WD4	work over load
6	0.770	WD5	overtime hours
6	0.670	WD12	industry expectations
5	0.607	FD6	time in household tasks
5	0.357	WD15	co-worker expectations
5	0.339	WD14	supervisor expectations
5	0.091	CD7	hours and schedule of self interest courses and groups
5	0.056	FD2	time caring for your relatives children
5	-0.012	FD13	participating in self-interest activities
4	-0.185	CD1	time allocated to volunteering
4	-0.290	WD8	work activities at home
4	-0.301	WD13	organizational expectations
4	-0.358	FD12	undertake formal training and education
4	-0.364	WD10	physical strain at work
4	-0.379	FD3	time caring for your friends children
4	-0.398	CD6	limited or no access to public transport
3	-0.409	WD9	emotional strain at work
3	-0.456	WD17	project characteristics
3	-0.589	WD11	mental strain at work
3	-0.611	CD9	undertaking parent-based pre-school and school related activities
3	-0.632	FD10	family activities at work
3	-0.684	WD16	interpersonal conflict at work
2	-0.742	FD7	household relationship conflict
2	-0.844	WD6	job insecurity
2	-0.869	CD5	hours and schedule of schools
2	-0.871	CD3	time in religious and faith activities
2	-0.886	FD5	time caring for pets
2	-1.000	CD2	emotional strain in volunteering
1	-1.046	CD8	hours and schedule of training and education orgs
1	-1.134	WD7	overnight travel for work
1	-1.219	FD15	time supporting your grandchildren's activities
1	-1.219	FD8	child with a disability
1	-1.219	CD4	hours and schedule of health, welfare and community organizations
1	-1.219	FD9	unfairness in household work

Appendix 9c

Ranking of demands for group three

Ranking of demands for group three			
Rank	**Z Score**	**Demand ID**	**Demand**
7	2.733	WD1	time in paid work
7	1.730	FD16	time in social activities
7	1.482	WD12	industry expectations
7	1.475	FD6	time in household tasks
7	1.335	WD13	organizational expectations
7	1.321	WD14	supervisor expectations
6	1.213	WD15	co-worker expectations
6	1.162	WD2	commuting time
6	1.034	WD11	mental strain at work
6	0.943	FD11	health and fitness activities
6	0.931	WD18	undertake training and education for work
6	0.644	FD13	participating in self-interest activities
5	0.644	FD10	family activities at work
5	0.619	WD5	overtime hours
5	0.189	WD17	project characteristics
5	0.158	WD4	work over load
5	0.133	FD12	undertake formal training and education
5	0.094	WD9	emotional strain at work
4	0.024	WD16	interpersonal conflict at work
4	-0.002	FD5	time caring for pets
4	-0.014	FD9	unfairness in household work
4	-0.272	FD7	household relationship conflict
4	-0.294	WD6	job insecurity
4	-0.303	WD8	work activities at home
4	-0.460	CD1	time allocated to volunteering
3	-0.465	CD6	limited or no access to public transport
3	-0.519	WD10	physical strain at work
3	-0.643	CD7	hours and schedule of self interest courses and groups
3	-0.665	FD4	time caring for relatives
3	-0.716	CD8	hours and schedule of training and education organizations
3	-0.773	WD3	non standard work schedule
2	-0.828	FD2	time caring for your relatives children
2	-0.876	CD2	emotional strain in volunteering
2	-0.878	FD3	time caring for your friends children
2	-0.999	CD3	time in religious and faith activities
2	-1.028	FD14	time supporting your children’s activities
2	-1.035	WD7	overnight travel for work
1	-1.059	CD4	hours and schedule of health, welfare and community organizations
1	-1.129	FD8	child with a disability
1	-1.148	FD1	time caring for your children
1	-1.225	CD5	hours and schedule of schools
1	-1.267	FD15	time supporting your grandchildren’s activities
1	-1.267	CD9	undertaking parent-based pre-school and school related activities

Appendix 9d

Ranking of demands for group four

Ranking of demands for group four			
Rank	**Z Score**	**Demand ID**	**Demand**
7	1.783	WD2	commuting time
7	1.766	WD1	time in paid work
7	1.737	FD14	time supporting your children's activities
7	1.694	FD1	time caring for your children
7	1.546	FD6	time in household tasks
7	1.331	WD6	job insecurity
6	1.269	WD5	overtime hours
6	1.229	FD5	time caring for pets
6	0.835	WD4	work over load
6	0.799	WD12	industry expectations
6	0.682	WD15	co-worker expectations
6	0.525	WD14	supervisor expectations
5	0.520	WD9	emotional strain at work
5	0.443	WD17	project characteristics
5	0.438	WD13	organizational expectations
5	0.400	FD7	household relationship conflict
5	0.390	FD10	family activities at work
5	0.349	WD11	mental strain at work
4	0.344	FD13	participating in self-interest activities
4	0.273	CD5	hours and schedule of schools
4	0.044	WD8	work activities at home
4	-0.136	FD9	unfairness in household work
4	-0.174	CD6	limited or no access to public transport
4	-0.235	FD16	time in social activities
4	-0.319	FD11	health and fitness activities
3	-0.332	WD16	interpersonal conflict at work
3	-0.474	WD18	undertake training and education for work
3	-0.640	FD8	child with a disability
3	-0.640	FD12	undertake formal training and education
3	-0.660	FD3	time caring for your friends children
3	-0.726	WD3	non standard work schedule
2	-0.855	WD7	overnight travel for work
2	-1.011	CD8	hours and schedule of training and education orgs
2	-1.021	FD4	time caring for relatives
2	-1.026	CD9	undertaking parent-based pre-school and school related t
2	-1.031	FD2	time caring for your relatives children
1	-1.196	CD7	hours and schedule of self interest courses and groups
1	-1.196	CD1	time allocated to volunteering
1	-1.201	WD10	physical strain at work
1	-1.382	CD2	emotional strain in volunteering
1	-1.382	CD3	time in religious and faith activities
1	-1.382	FD15	time supporting your grandchildren's activities
1	-1.382	CD4	hours and schedule of health, welfare and community organization's

Appendix 9e

Role Salience:
Factor analysis
Internal consistency reliability analysis

Role salience analysis

Given that the community role salience scale had not been utilised in previous studies, it was considered important to investigate whether the scale differentiated from work and family role salience scales. As 50[1] participants completed the 12 item scale, the subject to item ratio of approximately 4:1 was considered appropriate for factor analysis, given that some studies have used a ratio of 3:1 (Costello and Osborne, 2005). Furthermore, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) value was 0.728, the Bartlett's Test of Sphericity was significant (p=.000), and the correlation matrix revealed the presence of many coefficients of .3 and above, therefore verifying that the dataset was suitable for factor analysis (Pallant, 2007).

Data collected on the role salience scale were analysed using principal component analysis with varimax rotation, which yielded a three factor structure. The three factor solution explained 74.62% of the variance. The rotated components matrix is shown in Table 9e-1. Factor one had an eigenvalue of 4.53 and explained 37.82% of the variance, and represented community role salience. Factor two had an eigenvalue of 2.49 and explained 20.79% of the variance, and represented family role salience. Factor three had an eigenvalue of 1.93 and explained 16.14% of the variance, and represented work role salience. To check the reliability of the three subscales, Cronbach's alpha coefficients were calculated to ascertain the internal consistency reliability. Alpha coefficients of a scale are considered satisfactory at 0.7 and above (Pallant, 2007). The subscale analysis indicated acceptable internal consistency for the three components (community alpha coefficient = 0.966; family alpha coefficient =0.842; work alpha coefficient =0.790).

Table 9e-1: Rotated components matrix for role salience.

		Component		
Scale item	**Role**	**1**	**2**	**3**
I am very much involved personally in my community.	community	**0.951**	-0.073	0.081
Most of the important things that happen to me involve my community.	community	**0.928**	-0.159	0.166
Most of my interests are centered around my community.	community	**0.921**	-0.115	0.153
A major source of satisfaction in my life is my community.	community	**0.918**	-0.141	0.154
Most of my interests are centered around my family.	family	-0.123	**0.886**	-0.026
I am very much involved personally in my family.	family	0.162	**0.829**	-0.031
Most of the important things that happen to me involve my family.	family	-0.268	**0.82**	0.062
A major source of satisfaction in my life is my family.	family	-0.277	**0.741**	-0.066
Most of the important things that happen to me involve my work.	work	0.037	0.095	**0.846**
A major source of satisfaction in my life is my work.	work	0.097	-0.071	**0.782**
I am very much involved personally in my work.	work	0.142	-0.125	**0.749**
Most of my interests are centered around my work.	work	0.156	0.04	**0.709**

[1] Although the total sample was 59, 9 participants did not load onto the demand factors and therefore were excluded from subsequent analysis.

Appendix 9f

Resources considered important for group one to meet high ranked demands

Resources considered important for group one to meet high ranked demands					
	Resource	**Important**		**Not important**	
		n	**%**	**n**	**%**
WR1	Autonomy at work	23	92	2	8
WR2	Skill utilization at work	24	96	1	4
WR3	Work-related training and education	18	72	7	28
WR4	Income from work	22	88	3	12
WR5	Meaning from your work	23	92	2	8
WR6	Pride in your work	25	100	0	0
WR7	Flexible work hours	20	80	5	20
WR8	Flexible work schedule	15	60	10	40
WR9	Rostered day off	18	72	7	28
WR10	Work remotely	13	52	12	48
WR11	Childcare benefits	2	8	23	92
WR12	Eldercare benefits	2	8	23	92
WR13	Time off work for family	19	76	6	24
WR14	Time off work for personal reasons	23	92	2	8
WR15	Part time work	4	16	21	84
WR16	Job share	8	32	17	68
WR17	Compressed work week	14	56	11	44
WR18	Supportive work-life culture	20	80	5	20
WR19	Emotional support from supervisor	23	92	2	8
WR20	Emotional support from co-workers	22	88	3	12
WR21	Information support from supervisor	22	88	3	12
WR22	Information support from co-workers	20	80	5	20
WR23	Practical support from supervisor	22	88	3	12
WR24	Practical support from co-workers	22	88	3	12
WR25	Employee assistance program	13	52	12	48
FR1	Family problem solving	13	52	12	48
FR2	Family cohesion	19	76	6	24
FR3	Parental time-support for care of children	6	24	19	76
FR4	Parental financial-support for care of children	1	4	24	96
FR5	Partner support for eldercare	2	8	23	92
FR6	Partner emotional support	17	68	8	32
FR7	Partner information support	15	60	10	40
FR8	Partner practical support	17	68	8	32
FR9	Relative support for childcare	6	24	19	76
FR10	Relative support for eldercare	2	8	23	92
FR11	Relative emotional support	11	44	14	56
FR12	Relative information support	9	36	16	64
FR13	Relative practical support	7	28	18	72
FR14	Friend support for childcare	3	12	22	88
FR15	Friend support for eldercare	1	4	24	96
FR16	Friend emotional support	11	44	14	56
FR17	Friend practical support	10	40	15	60
FR18	In-house help with household work and chores	19	76	6	24
FR19	Relative help with household work and chores	4	16	21	84

Resources considered important for group one to meet high ranked demands					
	Resource	**Important**		**Not important**	
		n	**%**	**n**	**%**
FR20	Partner employment	14	56	11	44
FR21	Meaning from family	23	92	2	8
FR22	Pride in family	22	88	3	12
FR23	Time with pets	6	24	19	76
FR24	Friend information support	13	52	12	48
FR25	Time for yourself	24	96	1	4
FR26	Time in physical activities and sports	19	76	6	24
CR1	Flexibility when undertaking volunteering activity	8	32	17	68
CR2	Child care program	2	8	23	92
CR3	Before and after school program	2	8	23	92
CR4	School holiday program	1	4	24	96
CR5	Purchased services such as house cleaning, gardening.	11	44	14	56
CR6	Health, welfare and community services	6	24	19	76
CR7	Training and education facilities	8	32	17	68
CR8	Self-interest courses	8	32	17	68
CR9	Religious group emotional support	2	8	23	92
CR10	Religious group information support	2	8	23	92
CR11	Religious group practical support	2	8	23	92
CR12	Public transport	15	60	10	40
CR13	Community transport	3	12	22	88
CR14	Meaning from community	8	32	17	68
CR15	Pride in community	9	36	16	64
CR16	Community group emotional support	3	12	22	88
CR17	Community group information support	3	12	22	88
CR18	Community group practical support	4	16	21	84

Appendix 9g

Resources considered important for group two to meet high ranked demands

Resources considered important for group two to meet high ranked demands					
	Resource	**Important**		**Not important**	
		n	**%**	**n**	%
WR1	Autonomy at work	6	75	2	25
WR2	Skill utilization at work	8	100	0	0
WR3	Work-related training and education	5	62.5	3	37.5
WR4	Income from work	8	100	0	0
WR5	Meaning from your work	8	100	0	0
WR6	Pride in your work	8	100	0	0
WR7	Flexible work hours	7	87.5	1	12.5
WR8	Flexible work schedule	5	62.5	3	37.5
WR9	Rostered day off	6	75	2	25
WR10	Work remotely	2	25	6	75
WR11	Childcare benefits	2	25	6	75
WR12	Eldercare benefits	2	25	6	75
WR13	Time off work for family	7	87.5	1	12.5
WR14	Time off work for personal reasons	8	100	0	0
WR15	Part time work	3	37.5	5	62.5
WR16	Job share	4	50	4	50
WR17	Compressed work week	4	50	4	50
WR18	Supportive work-life culture	5	62.5	3	37.5
WR19	Emotional support from supervisor	7	87.5	1	12.5
WR20	Emotional support from co-workers	8	100	0	0
WR21	Information support from supervisor	8	100	0	0
WR22	Information support from co-workers	8	100	0	0
WR23	Practical support from supervisor	8	100	0	0
WR24	Practical support from co-workers	8	100	0	0
WR25	Employee assistance program	5	62.5	3	37.5
FR1	Family problem solving	4	50	4	50
FR2	Family cohesion	7	87.5	1	12.5
FR3	Parental time-support for care of children	4	50	4	50
FR4	Parental financial-support for care of children	2	25	6	75
FR5	Partner support for eldercare	2	25	6	75
FR6	Partner emotional support	6	75	2	25
FR7	Partner information support	5	62.5	3	37.5
FR8	Partner practical support	6	75	2	25
FR9	Relative support for childcare	4	50	4	50
FR10	Relative support for eldercare	5	62.5	3	37.5
FR11	Relative emotional support	4	50	4	50
FR12	Relative information support	4	50	4	50
FR13	Relative practical support	4	50	4	50
FR14	Friend support for childcare	4	50	4	50
FR15	Friend support for eldercare	2	25	6	75
FR16	Friend emotional support	5	62.5	3	37.5
FR17	Friend practical support	5	62.5	3	37.5
FR18	In-house help with household work and chores	6	75	2	25
FR19	Relative help with household work and chores	3	37.5	5	62.5
FR20	Partner employment	3	37.5	5	62.5
FR21	Meaning from family	8	100	0	0

Resources considered important for group two to meet high ranked demands					
	Resource	**Important**		**Not important**	
		n	**%**	**n**	%
FR22	Pride in family	8	100	0	0
FR23	Time with pets	3	37.5	5	62.5
FR24	Friend information support	5	62.5	3	37.5
FR25	Time for yourself	7	87.5	1	12.5
FR26	Time in physical activities and sports	7	87.5	1	12.5
CR1	Flexibility when undertaking volunteering activity	6	75	2	25
CR2	Child care program	2	25	6	75
CR3	Before and after school program	2	25	6	75
CR4	School holiday program	2	25	6	75
CR5	Purchased services such as house cleaning, gardening.	4	50	4	50
CR6	Health, welfare and community services	4	50	4	50
CR7	Training and education facilities	5	62.5	3	37.5
CR8	Self-interest courses	4	50	4	50
CR9	Religious group emotional support	2	25	6	75
CR10	Religious group information support	2	25	6	75
CR11	Religious group practical support	2	25	6	75
CR12	Public transport	5	62.5	3	37.5
CR13	Community transport	5	62.5	3	37.5
CR14	Meaning from community	4	50	4	50
CR15	Pride in community	6	75	2	25
CR16	Community group emotional support	5	62.5	3	37.5
CR17	Community group information support	5	62.5	3	37.5
CR18	Community group practical support	5	62.5	3	37.5

Appendix 9h

Resources considered important for group three to meet high ranked demands

Resources considered important for group three to meet high ranked demands					
	Resource	**Important**		**Not important**	
		n	**%**	**n**	**%**
WR1	Autonomy at work	13	100	0	0
WR2	Skill utilization at work	13	100	0	0
WR3	Work-related training and education	13	100	0	0
WR4	Income from work	13	100	0	0
WR5	Meaning from your work	13	100	0	0
WR6	Pride in your work	13	100	0	0
WR7	Flexible work hours	9	69.2	4	30.8
WR8	Flexible work schedule	7	53.8	6	46.2
WR9	Rostered day off	12	92.3	1	7.7
WR10	Work remotely	7	53.8	6	46.2
WR11	Childcare benefits	0	0.0	13	100.0
WR12	Eldercare benefits	1	7.7	12	92.3
WR13	Time off work for family	10	76.9	3	23.1
WR14	Time off work for personal reasons	12	92.3	1	7.7
WR15	Part time work	1	7.7	12	92.3
WR16	Job share	2	15.4	11	84.6
WR17	Compressed work week	8	61.5	5	38.5
WR18	Supportive work-life culture	9	69.2	4	30.8
WR19	Emotional support from supervisor	11	84.6	2	15.4
WR20	Emotional support from co-workers	11	84.6	2	15.4
WR21	Information support from supervisor	13	100.0	0	0.0
WR22	Information support from co-workers	13	100.0	0	0.0
WR23	Practical support from supervisor	12	92.3	1	7.7
WR24	Practical support from co-workers	13	100.0	0	0.0
WR25	Employee assistance program	8	61.5	5	38.5
FR1	Family problem solving	9	69.2	4	30.8
FR2	Family cohesion	10	76.9	3	23.1
FR3	Parental time-support for care of children	1	7.7	12	92.3
FR4	Parental financial-support for care of children	1	7.7	12	92.3
FR5	Partner support for eldercare	3	23.1	10	76.9
FR6	Partner emotional support	7	53.8	6	46.2
FR7	Partner information support	8	61.5	5	38.5
FR8	Partner practical support	8	61.5	5	38.5
FR9	Relative support for childcare	1	7.7	12	92.3
FR10	Relative support for eldercare	3	23.1	10	76.9
FR11	Relative emotional support	8	61.5	5	38.5
FR12	Relative information support	7	53.8	6	46.2
FR13	Relative practical support	7	53.8	6	46.2
FR14	Friend support for childcare	1	7.7	12	92.3
FR15	Friend support for eldercare	2	15.4	11	84.6
FR16	Friend emotional support	9	69.2	4	30.8
FR17	Friend practical support	9	69.2	4	30.8
FR18	In-house help with household work and chores	9	69.2	4	30.8
FR19	Relative help with household work and chores	6	46.2	7	53.8
FR20	Partner employment	5	38.5	8	61.5
FR21	Meaning from family	13	100.0	0	0.0

Resources considered important for group three to meet high ranked demands					
	Resource	**Important**		**Not important**	
		n	**%**	**n**	**%**
FR22	Pride in family	13	100.0	0	0.0
FR23	Time with pets	6	46.2	7	53.8
FR24	Friend information support	10	76.9	3	23.1
FR25	Time for yourself	13	100.0	0	0.0
FR26	Time in physical activities and sports	12	92.3	1	7.7
CR1	Flexibility when undertaking volunteering activity	5	38.5	8	61.5
CR2	Child care program	0	0.0	13	100.0
CR3	Before and after school program	0	0.0	13	100.0
CR4	School holiday program	0	0.0	13	100.0
CR5	Purchased services such as house cleaning, gardening.	5	38.5	8	61.5
CR6	Health, welfare and community services	6	46.2	7	53.8
CR7	Training and education facilities	10	76.9	3	23.1
CR8	Self-interest courses	9	69.2	4	30.8
CR9	Religious group emotional support	2	15.4	11	84.6
CR10	Religious group information support	0	0.0	13	100.0
CR11	Religious group practical support	0	0.0	13	100.0
CR12	Public transport	8	61.5	5	38.5
CR13	Community transport	4	30.8	9	69.2
CR14	Meaning from community	3	23.1	10	76.9
CR15	Pride in community	3	23.1	10	76.9
CR16	Community group emotional support	3	23.1	10	76.9
CR17	Community group information support	4	30.8	9	69.2
CR18	Community group practical support	3	23.1	10	76.9

Appendix 9i

Resources considered important for group four to meet high ranked demands

Resources considered important for group four to meet high ranked demands					
	Resource	**Important**		**Not important**	
		n	**%**	**n**	**%**
WR1	Autonomy at work	4	100.0	0	0.0
WR2	Skill utilization at work	4	100.0	0	0.0
WR3	Work-related training and education	3	75.0	1	25.0
WR4	Income from work	4	100.0	0	0.0
WR5	Meaning from your work	4	100.0	0	0.0
WR6	Pride in your work	4	100.0	0	0.0
WR7	Flexible work hours	3	75.0	1	25.0
WR8	Flexible work schedule	3	75.0	1	25.0
WR9	Rostered day off	3	75.0	1	25.0
WR10	Work remotely	1	25.0	3	75.0
WR11	Childcare benefits	1	25.0	3	75.0
WR12	Eldercare benefits	0	0.0	4	100.0
WR13	Time off work for family	4	100.0	0	0.0
WR14	Time off work for personal reasons	3	75.0	1	25.0
WR15	Part time work	2	50.0	2	50.0
WR16	Job share	1	25.0	3	75.0
WR17	Compressed work week	2	50.0	2	50.0
WR18	Supportive work-life culture	3	75.0	1	25.0
WR19	Emotional support from supervisor	3	75.0	1	25.0
WR20	Emotional support from co-workers	2	50.0	2	50.0
WR21	Information support from supervisor	4	100.0	0	0.0
WR22	Information support from co-workers	4	100.0	0	0.0
WR23	Practical support from supervisor	3	75.0	1	25.0
WR24	Practical support from co-workers	4	100.0	0	0.0
WR25	Employee assistance program	2	50.0	2	50.0
FR1	Family problem solving	4	100.0	0	0.0
FR2	Family cohesion	4	100.0	0	0.0
FR3	Parental time-support for care of children	4	100.0	0	0.0
FR4	Parental financial-support for care of children	2	50.0	2	50.0
FR5	Partner support for eldercare	1	25.0	3	75.0
FR6	Partner emotional support	4	100.0	0	0.0
FR7	Partner information support	3	75.0	1	25.0
FR8	Partner practical support	4	100.0	0	0.0
FR9	Relative support for childcare	3	75.0	1	25.0
FR10	Relative support for eldercare	1	25.0	3	75.0
FR11	Relative emotional support	4	100.0	0	0.0
FR12	Relative information support	3	75.0	1	25.0
FR13	Relative practical support	4	100.0	0	0.0
FR14	Friend support for childcare	4	100.0	0	0.0
FR15	Friend support for eldercare	0	0.0	4	100.0
FR16	Friend emotional support	4	100.0	0	0.0
FR17	Friend practical support	4	100.0	0	0.0
FR18	In-house help with household work and chores	3	75.0	1	25.0
FR19	Relative help with household work and chores	0	0.0	4	100.0
FR20	Partner employment	2	50.0	2	50.0
FR22	Meaning from family	4	100.0	0	0.0

Resources considered important for group four to meet high ranked demands					
	Resource	**Important**		**Not important**	
		n	**%**	**n**	**%**
FR23	Pride in family	4	100.0	0	0.0
FR24	Time with pets	3	75.0	1	25.0
FR25	Friend information support	3	75.0	1	25.0
FR26	Time for yourself	4	100.0	0	0.0
FR27	Time in physical activities and sports	2	50.0	2	50.0
CR1	Flexibility when undertaking volunteering activity	1	25.0	3	75.0
CR2	Child care program	0	0.0	4	100.0
CR3	Before and after school program	1	25.0	3	75.0
CR4	School holiday program	0	0.0	4	100.0
CR5	Purchased services such as house cleaning, gardening.	0	0.0	4	100.0
CR6	Health, welfare and community services	1	25.0	3	75.0
CR7	Training and education facilities	2	50.0	2	50.0
CR8	Self-interest courses	0	0.0	4	100.0
CR9	Religious group emotional support	0	0.0	4	100.0
CR10	Religious group information support	0	0.0	4	100.0
CR11	Religious group practical support	0	0.0	4	100.0
CR12	Public transport	4	100.0	0	0.0
CR13	Community transport	2	50.0	2	50.0
CR14	Meaning from community	0	0.0	4	100.0
CR15	Pride in community	1	25.0	3	75.0
CR16	Community group emotional support	2	50.0	2	50.0
CR17	Community group information support	2	50.0	2	50.0
CR18	Community group practical support	1	25.0	3	75.0